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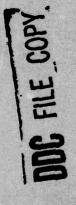
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ECONOMICS DEPARTMENT PUBLICATIONS, 1948-1962: An Author Index of the Open Literature, with Abstracts

Harriett Porch





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ECONOMICS DEPARTMENT PUBLICATIONS,

1948-1962: An Author Index

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### PREFACE

This index is a revision of RAND Memorandum RM-2800-1, <u>Economics</u>

<u>Department Publications</u>, 1948-1962, October 1962, updating it to include publications issued by the Economics Department through the end of December 1962. Publications issued after this date appear in yearly supplements.

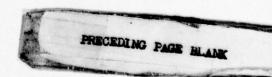
The present Memorandum follows the format established in RM-2800-1, being arranged by author rather than by serial number. It is believed that this arrangement will be welcomed by most users, as it is more familiar to research workers, scholars, and librarians generally. Because authors are usually specialists, an author index also serves as a specialized subject index, and the chronological arrangement of entries under each author's name makes it easy to find the author's latest or most complete study of a given subject. This chronological arrangement under the author's name also enables the user to find an entry by means of its serial number, and numerical finding lists are provided for this purpose.

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## INTRODUCTION

## WHAT THIS INDEX IS

This is an author index to RAND Economics Department publications available in the open literature. It extends in time from the Department's establishment in 1948 to December 31, 1962. It includes monographs (books and "Reports"), less formal monographs or working papers ("RAND Memoranda"), and journal-type professional contributions ("Papers"). Book reviews written by Economics Department authors and items now out of print are omitted.

Because this is a departmental index it excludes some related publications issued by other departments, but it includes the work of authors elsewhere in RAND if issued by the Economics Department.

A comprehensive guide to RAND open-literature publications can be found in the hardcover reference volume, <u>Index of Selected Publications</u> (August 1962), and in the index-abstracts journal <u>Selected RAND Abstracts</u>, published yearly since 1962.

The present index has as its basic reference list complete bibliographical entries with abstracts, arranged under authors' names. The authors' names are given alphabetically by surname, and the publications of each author are given under his name in a single chronological list (not in separate lists for each publications series). For publications with more than one author, full entries are given for the first-named author, and cross-references are given under the names of coauthors. As a reference aid, the names of all authors are given alphabetically in the Author List immediately preceding the Author Index.

## HOW TO USE THIS INDEX

If the author's name is known, the user can turn immediately to the name in the Author Index, where he will find the various titles arranged chronologically by date of issue, each with abstract and bibliographical data. The pages of the Author Index are keyed at the top with the first two letters of the author's surname. If the RAND publication number is known (but not the author) the author's name is found by referring to the Numerical Finding Lists. Here RAND publication numbers are given in numerical order, together with the surname of the first-named author, in separate lists for each of the three series: Reports (R's), RAND Memoranda (RM's), and Papers (P's). RAND studies published as books are listed alphabetically by title on pages 11 and 12.

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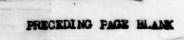
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Listed below in alphabetical order by title are RAND studies which have been published as commercial books. Abstracts of the books are given under the first named author in the author section of this index. Books are not sold to the public by RAND but may be purchased from a bookseller or from the publisher. The prices quoted here are for the reader's convenience and may be subject to change.

- THE ECONOMICS OF DEFENSE IN THE NUCLEAR AGE, C. J. Hitch and R. N. McKean. Harvard University Press, Cambridge, Mass., 1960. 442 pp. Illus. \$9.50.
- EFFICIENCY IN GOVERNMENT THROUGH SYSTEMS ANALYSIS, R. N. McKesn. John Wiley & Sons, New York, 1958. 336 pp. \$8.00.
- FOREIGN AID: THEORY AND PRACTICE IN SOUTHERN ASIA, C. Wolf, Jr. Princeton University Press, Princeton, N.J., 1960. 442 pp. Tables. \$7.50.
- THE FRENCH ECONOMY AND THE STATE, W. Baum.
  Princeton University Press, Princeton, N.J., 1954. 391 pp.
  Tables. \$7.50.
- LABOR PRODUCTIVITY IN SOVIET AND AMERICAN INDUSTRIES, W. Galenson. Columbia University Press, New York, 1954. 273 pp. Tables. \$5.50.
- LINEAR PROGRAMMING AND ECONOMIC ANALYSIS, R. Dorfman, P. A. Samuelson, and R. M. Solow. McGraw Hill Book Company, Inc. New York, 1958. 527 pp. Tables. \$10.00.
- MOBILIZING RESOURCES FOR WAR: THE ECONOMIC ALTERNATIVES, T. Scitovsky, E. S. Shaw, and L. Tarshis. McGraw-Hill Book Company, Inc., New York, 1951. 284 pp. \$4.50.
- PRICES AND PRODUCTION OF MACHINERY IN THE SOVIET UNION, 1928-1958, Richard Moorsteen. Harvard University Press, Cambridge, Mass., 1962. 498 pp. Tables. \$15.00.
- PSYCHOSIS AND CIVILIZATION, R. Goldhamer and A. W. Marshall. Free Press, Glencoe, Ill., 1953. 126 pp. Tables and Charts. \$4.00.
- THE REAL NATIONAL INCOME OF SOVIET RUSSIA SINCE 1928, Abram
  Bergson. Harvard University Press, Cambridge, Mass., 1961.
  488 pp. Illus. \$8.75.
- REAL WAGES IN SOVIET RUSSIA SINCE 1928 (forthcoming), Janet G. Chapman. Harvard University Press, Cambridge, Mass.

- SCHEDULING OF PETROLEUM REFINERY OPERATIONS, A. S. Manne.
  Harvard University Press, Cambridge, Mass., 1956. 185 pp.
  Tables. \$5.00.
- SOVIET NATIONAL INCOME AND PRODUCT IN 1928, Oleg Hoeffding. Columbia University Press, New York, 1954. 160 pp. Tables. \$3.75.
- SOVIET NATIONAL INCOME AND PRODUCT, Abram Bergson and Hans Heymann, Jr. Columbia University Press, New York, 1954. 261 pp. Tables. \$5.00.
- STUDIES IN THE ECONOMICS OF TRANSPORTATION, M. Beckman, C. B. McGuire, and C. B. Winsten. Yale University Press, New Haven, Conn., 1956. 232 pp. \$4.00.
- TEACHER SHORTAGES AND SALARY SCHEDULES, J. A. Kershaw and R. N. McKean. McGraw-Hill Book Company, Inc., New York, 1962. 204 pp. Illus. \$2.95.
- A TIME SERIES ANALYSIS OF INTERINDUSTRY DEMANDS, K. J. Arrow, M. Hoffenberg, H. Markowitz, and R. Shephard. North-Holland Publishing Company, Amsterdam, The Netherlands, 1959. 289 pp. Tables. \$7.70
- WATER SUPPLY: ECONOMICS, TECHNOLOGY AND WATER POLICY, J. Hirshleifer, J. DeHaven, and J. Milliman. University of Chicago Press, Chicago, Ill., 378 pp. Illus. \$7.50.

## AUTHOR LIST

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## Title & Abstract

## Publication No. and Date

## Alchian, A. A.

AN AIRFRAME PRODUCTION FUNCTION

P-108 Oct. 20, 1949

A study of the reliability of learning curves and the Minus One-Third Curve or the Eighty Per Cent Curve. The determining factors of the curve, the universality throughout the industry, and the profitable fields of research are discussed. 15 pp. Illus. Presented before the American Economic Assn. at New York City, Dec. 27-30, 1949.

## Alchian, A. A.

RELIABILITY OF PROGRESS CURVES IN AIRFRAME PRODUCTION

RM-260-1 (ATI 210621)

Feb. 3, 1950

A presentation of statistical tests that determine the similarity of the functions among various airframe manufacturers based on World War II data. Makes an assessment of the prediction reliability with these curves. 33 pp. Illus.

### Alchian, A. A.

RELIABILITY OF COST ESTIMATES: SOME EVIDENCE

ESTIMATING OUTPUT FROM FLOOR SPACE:

RM-481 (ATI 210346)

Oct. 30, 1950

Data from several sources on the reliability of cost estimates are presented as an aid that can be used as a yardstick for gauging the reliability of other cost estimates or predictions. Il pp.

## Alchian, A. A. and

FEASIBILITY

RM-563

(ATI 210689) March 13, 1951

A. Skogstad & N. Hanunian

A discussion of estimating airframe output from any given plant when only the airframe type and weight, the floor area of the plant, and the date on which the plant initiated production of the specified model are known. 16 pp.

#### Publication No. Author(s) and Date Title & Abstract THE CHEF, GOURMET, AND GOURMAND Alchian, A. A. RM-798 (ATI 169031) An attempt (1) to distinguish between Mar. 24, 1952 research and development decisions and procurement decisions and (2) to indicate the relevance of such distinction to RAND's problems. In addition, the different kinds of required information and objectives sought are discussed. 12 pp. ECONOMIC REPLACEMENT POLICY Alchian, A. A. RM-2153 April 9, 1958 Presents a practical guide for equipment replacement based on the comparison of present-value costs. Contains the general economic principles and an illustrative problem. Omits computational methods. 31 pp. Illus. Alchian, A. A. AN ECONOMIC ANALYSIS OF THE MARKET FOR RM-2190-RC and SCIENTISTS AND ENGINEERS June 6, 1958 K. J. Arrow & W. M. Capron An attempt to determine whether there is or recently has been a "shortage" of scientists and engineers, and, if so, in what sense a shortage can exist. Reasons for seeking a greater supply of scientists and engineers are discussed. Possible defects in the economic system that affect demands for scientists and engineers are con-

sidered. Arguments about the efficiency of our educational system are evaluated, and a case is made for the policy of differential pay for teachers according to the scarcity of

their specialties. 125 pp. Illus

## Title & Abstract

## Publication No. and Date

## Alchian, A. A.

#### COSTS AND OUTPUTS

P-1449 Sept. 3, 1958

Gives propositions designed to eliminate some of the ambiguities and errors involved in the relationships between cost and output both in the long and short run. The suggested propositions are shown to be empirically valid in distinguishing between rate and quantity of output, the changes in technology as distinct from changes in technique, the use of calendar-time dates of output instead of technical fixity for distinguishing output operations, and the use of capital-value concepts instead of rates of costs. 28 pp. Illus. Published in The Allocation of Resources, Paul Baran, Tibor Scitovsky, and E. S. Shaw (editors), Stanford University Press, Stanford, Calif., 1959, \$5.00.

## Alchian, A. A. and R. A. Kessel

## THE MEANING AND VALIDITY OF INFLATION-INDUCED BUSINESS PROFITS RESULTING FROM A LAG OF WAGES BEHIND PRICES

P-1488 Nov. 6, 1958

A discussion of the belief that inflation causes prices to rise faster than wages. Attempts to convert this argument into empirically meaningful propositions and to examine the meaning, empirical content, and evidence supporting certain propositions. 58 pp. Tables. Published in American Economic Review, June 1960.

## Alchian, A. A.

#### SOME ECONOMICS OF PROPERTY

P-2316 May 26, 1961

An attempt to separate and classify various types of "rights" constituting ownership, renting, leasing, and trusteeship. The purpose is to contrast the implied behavior consequences under various groupings of rights. In particular, the paper is directed toward aiding analysis of the various methods of assigning and using radio frequencies. Effects of rights to transfer and bearing of responsibility are discussed. 77 pp. Illus.

#### Publication No. Author(s) Title & Abstract and Date Arrow, K. J. THE DETERMINATION OF MANY-COMMODITY PREF-P-49 ERENCE SCALES BY TWO-COMMODITY COMPARISONS Aug. 3, 1948 and J.W.T. Youngs A comparison of two commodities under the customary economic assumptions to determine a preference scale of many commodities. 16 pp. Published in Metroeconomica, Dec. 1952. Arrow, K. J. THE POSSIBILITY OF A UNIVERSAL SOCIAL RAOP-41 WELFARE FUNCTION Oct. 26, 1948 An examination of the possibility and basis for a universal social welfare function. 19 pp. Arrow, K. J. A MATHEMATICAL MODEL OF AN AIR TRANSPOR-RM-224 TATION SYSTEM Aug. 26, 1949 and T. W. Anderson A development of a mathematical model of an air transportation system in order to study the most efficient program of operations for transporting a given amount of goods between two fixed locations per unit of time. 7 pp. Arrow, K. J. NOTES ON LINEAR PROGRAMMING -- PART XLIII: RM-1976 A FEASIBILITY ALGORITHM FOR ONE-WAY SUB-(AD 144278) and STITUTION IN PROCESS ANALYSIS Sept. 12, 1957 S. M. Johnson A proof that an algorithm for the most efficient assignment of machines to tasks solves an equivalent linear-programming problem. The study assumes that with a certain number of machines (not all of the same capability) with which to do a certain number of tasks (not all of the same difficulty), it is better to use a more capable machine for a more difficult

task. 14 pp. Also published as P-941.

Author(s)	Title & Abstract	Publication No.
Arrow, K. J.	PRICE-QUANTITY ADJUSTMENTS IN MULTIPLE MARKETS WITH RISING DEMANDS	P-1364 May 7, 1958
	Part of an economic analysis of the engineer-scientist market. Models the effect of steady upward shifts in demand functions in the adjustment of prices and quantities. 13 pp. Included in Mathematical Methods in the Social Sciences, 1959, K. J. Arrow, S. Karlin, and P. Suppes Stanford Univ. Press, 1960. (\$8.75).	,
Arrow, K. J. and W. M. Capron	DYNAMIC SHORTAGES AND PRICE RISES: THE ENGINEER-SCIENTIST CASE	P-1365 May 7, 1958
	A discussion of the rapid increase in demand for scientists and engineers in the U.S. and of the "shortage" conditions in the past seven years and the cause for these conditions. 21 pp. Illus. Published in The Quarterly Journal of Economics, May 1959.	
Arrow, K. J. with A. A. Alchian & W. M. Capron	AN ECONOMIC ANALYSIS OF THE MARKET FOR SCIENTISTS AND ENGINEERS For abstract, see same title under Alchian.	RM-2190-RC June 6, 1958
Arrow, K. J.	ECONOMIC WELFARE AND THE ALLOCATION OF RESOURCES FOR INVENTION	P-1856 Dec. 15, 1959
	Shows that the competitive system fails to	

Shows that the competitive system fails to achieve an optimal resource allocation in the case of invention because of increasing returns, inappropriability, and uncertainty. For an optimal allocation to invention, the government or some other nonprofit agency needs to finance research and invention.

23 pp. Presented before the Conference on the Economic and Social Factors Determining the Rate and Direction of Inventive Activity held at the Univ. of Minnesota, May 12-14, 1960. Included in The Rate and Direction of Inventive Activity: Economic and Social Factors (National Bureau of Economic Resources, Special Conference Series 13), 635 pp.

## Title & Abstract

## Publication No.

Arrow, K. J. and

A TIME SERIES ANALYSIS OF INTERINDUSTRY DEMANDS

Book, 1959

M. Hoffenberg, H. Markowitz, &

R. Shephard

North-Holland Publishing Co., Amsterdam, The Netherlands, 289 pp. Tables. \$7.70, at August 1962 rate of exchange.

A study of the demand by different industries for each other's products. Discusses the variations of observed industry outputs in the U.S. from those that would have prevailed had coefficients been fixed. Uses a time period of 1929-1950, assuming fixed coefficients for 1947. Finds that the differences between the direct and indirect estimates of output are almost perfectly explained by a set of predetermined variables chosen for their presumed influence on the economic system.

## Arrow, K. J.

## QUASI-CONCAVE PROGRAMMING

P-1847 Dec. 16, 1959

A. C. Enthoven

A fundamental problem dealing with the maximization of a differentiable quasi-concave function. The paper contains four theorems:
(1) extends the Kuhn-Tucker-Lagrange sufficiency conditions; (2) presents a version of the Kuhn-Tucker Constraint Qualification applicable to quasi-concave functions; (3) relates the concepts of quasi-concavity and diminishing marginal rates of substitution; (4) relates quasi-concavity to the familiar bordered determinant second-order condition for a constrained maximum. Extends the first two theorems to other problems and economic applications. 41 pp.

## Title & Abstract

Publication No.

Averch, Harvey with

BEHAVIOR OF THE FIRM SUBJECT TO EXTERNAL REGULATORY CONSTRAINT

P-2488-1 March 1962

L. L. Johnson

For abstract, see same title under Johnson.

Averch, Harvey

SOME INVESTMENT CRITERIA FOR UNDERDEVELOPED AREAS

P-2540 March 1962

A discussion of the social welfare function to determine the appropriate goal of an economy during its development. The social welfare functions used in development theory by Chenery, Eckstein, and Galenson-Leibenstein ignore individual preferences. This paper examines the social welfare functions used by these writers and the investment criteria derived from them. 29 pp.

Author(s)	Title & Abstract	Publication No. and Date
Barnett, H. J.	SPECIFIC INDUSTRY OUTPUT PROJECTIONS	P-208 Sept. 1, 1951
	A report on a conference on Research in	oepu. 1, 1))1

A report on a conference on Research in Income and Wealth, held in May 1951 at RAND. 25 pp. Illus. Published in Studies in Income and Wealth, Vol. 15, National Bureau of Economic Research, New York, 1953. \$3.50. Presented to the National Bureau of Economic Research Council at New York City, May 26, 1951.

## Title & Abstract

## Publication No. and Date

## Bator, F. M.

ON CONVEXITY, EFFICIENCY, AND MARKETS

P-2125 Oct. 19, 1960

A discussion of M. J. Farrell's article,
"The Convexity Assumption in the Theory of
Competitive Markets," in which Farrell
charges the author and J. deV. Graaff for
an error made in their analogy between competitive markets and one-man economies. This
paper substantiates Mr. Graaff's and the
author's position and examines Farrell's claim.
Only those parts of the Farrell paper are considered that deal with nonconvexity in production functions. 12 pp. Published in The
Journal of Political Economy, Oct. 1961.

## Bator, F. M.

THE USES OF ECONOMICS: THEORY, POLICY, AND P-2174
VALUES

Dec. 26

Dec. 28, 1960

Emphasizes the highest function of normative economics, that of clarifying the issues and choices concerning the allocation of resources. Indicates the need for a precise, quantitative theory about the economy and concludes with four possible strategies for normative economics. 7 pp. Delivered at the dedication of the Center for Advanced Study of the Brookings Institution, Washington, D.C., Nov. 17, 1960. Incorporated in Research for Public Policy, The Brookings Institution, 1961, \$2.50.

## Bator, F. M.

ON CAPITAL THEORY AND DEVELOPMENT PLANNING P-2219

Feb. 10, 1961

Comments on a paper by Prof. Otto Eckstein. The author and Eckstein are both bearish about the usefulness of capital theory to the development planner, but for somewhat different reasons. 8 pp. Prepared for the Dec. 1960 meeting of the American Economic Assn. at St. Louis, Mo. and published in the American Economic Review, Papers and Proceedings, May 1961.

## Title & Abstract

## Publication No. and Date

Baum, W.

THE FRENCH ECONOMY AND THE STATE Princeton University Press, Princeton, N.J. 391 pp. Tables. \$7.50.

1958

A study of the malfunctioning of the French economic system which inquires into the objectives, methods, and results of state intervention. Examines government efforts to handle certain problems of the postwar economy including reconstruction and modernization, economic fluctuations, and the balance of payments. Also deals with the state's role as a public financier, an entrepreneur, and a regulator of business and agriculture.

Bear, D. V. T.

A NOTE ON THE RELATIONSHIP OF SAVING TO THE P-1480 RATE OF INTEREST, REAL INCOME, AND EXPECTED Sept. 4, 1958 FUTURE PRICES

A refutation of the usual argument that saving and the rate of interest may be negatively related. Purports that a negative relation between savings and the interest rate should be in terms of the price elasticity of demand for future goods and that if such a negative relationship exists, the logical reaction of consumers to changes in expected future prices will be surprising. 13 pp. Illus. Published in The Review of Economics and Statistics, Feb. 1961.

Bear, D. V. T. and P. G. Clark THE IMPORTANCE OF INDIVIDUAL INDUSTRIES FOR DEFENSE PLANNING

P-2093 Sept. 15, 1960

Examines plausible supplies and demands in the U.S. economy after a nuclear war from the standpoint of peacetime defense preparations. Lists potential economic targets, the distribution of economic resources among them, discusses two premises underlying the analysis of prospective demands after an 80-city attack, and speculates on postwar relative values to guide peacetime actions to narrow prospective supply-demand imbalances. 22 pp. Illus. Presented before the American Economic Assn. at St. Louis, Dec. 28-30, 1960. Published under the title "Industrial Survival in Nuclear War," Quarterly Review of Economics and Business, Aug. 1961.

Bear, D. V. T. and P. G. Clark

## Title & Abstract

THE IMPORTANCE OF INDIVIDUAL INDUSTRIES FOR DEFENSE PLANNING: SUPPLEMENTAL DATA

Publication No. and Date

P-2124 Oct. 18, 1960

A supplement to P-2093. The present paper presents data on manufacturing value-added and population of 313 U.S. cities, postwar supplies of individual industries, postwar demands on individual industries, and postwar importance ratios for individual industries.

33 pp. Illus.

## Title & Abstract

Publication No. and Date

Becker, A. S.

PRICES OF PRODUCERS' DURABLES IN THE UNITED STATES AND THE USSR IN 1955

RM-2432 (AD 229374) Aug. 15, 1959

Joint study with the Stanford Research Institute to provide USSR-US wholesale price ratios for 1955 for a representative sample of producers' durable equipment comprised of some 500 items. Price trends in the two countries since 1955 indicate that a lower ruble-dollar ratio should be applied in comparisons of current Soviet and American investment outlays on producers' durables. 304 pp. Illus.

Becker, A. S.

COMPARISONS OF UNITED STATES AND USSR NATIONAL OUTPUT: SOME RULES OF THE GAME

P-1881 Feb. 15, 1960

An attempt to show that a prerequisite to public understanding of where we stand in the economic competition with the Soviet Union is the observance of a few critical rules in framing comparisons of the U.S. and Soviet economies. 16 pp. Published in World Politics, Oct. 1960, and in The Goal of Economic Growth, E. S. Phelps (ed.), W. W. Norton and Company, Inc., New York, 1962.

Becker, A. S.

ECONOMIC GROWTH AND SOVIET-AMERICAN RIVALRY

P-2286 April 21, 1961

Discusses the nature of the relationship between economic size and growth and the course of Soviet-American rivalry. Probes mainly into the question of how economic power is used as a means to desired ends. Also mentions that other measures besides the GNP must be used in comparing economic size and growth. 16 pp. Presented to the Annual Meeting of the Far Western Slavic Conference, San Francisco State College, San Francisco, Calif., April 29, 1961.

## Title & Abstract

## Publication No. and Date

## Beckmann, M.

## EFFICIENT TRANSPORTATION IN NETWORKS

P-282 March 19, 1952

A study of the efficient allocation of moving transportation equipment in a given network of highway lanes or railroads of limited road capacity. 5 pp. Published in the Minutes of the Third Annual Logistics Conference, Jan. 1952. Presented before the Logistics Conference at Washington, D. C., Jan. 1952.

## Beckmann, M.

A CONTINUOUS MODEL OF TRANSPORTATION

P-290

March 25, 1952

A study of commodity flows in terms of vector fields. Efficient transportation gives rise to a problem in the calculus of variations; the flow functions solving this problem contain price distribution functions as parameters. With net production functions dependent on prices, the model considered describes the flows and prices in a competitive regional market economy. 27 pp. Illus. Published in Econometrica, Oct. 1952. Presented before the Econometric Society at Minneapolis, Minn., Sept. 5, 1951.

## Beckmann, M. and

THE DETERMINATION OF TRAFFIC IN A ROAD NETWORK: AN ECONOMIC APPROACH

P-437

Oct. 6, 1953

C. B. McGuire

Part of a broader study on resource allocation problems in transportation. Suggests a framework in which the economic aspects of traffic engineering research problems are indicated, and the various results may be integrated. 20 pp. Published in Studies in the Economics of Transportation, by M. Beckmann, C. B. McGuire, and C. B. Winsten, Yale University Press, New Haven, Conn., 1956. \$4.00.

## Beckmann, M.

THE ALLOCATION OF SWITCHING WORK IN A SYSTEM P-448
OF CLASSIFICATION YARDS
Dec. 5, 1953

- T. C. Koopmans
- C. B. McGuire &
- C. B. Winsten

Examines, from an economic standpoint, the switching work of a given system of classification yards through which fixed traffic flows move. 11 pp. Published in the Proceedings of the Railway Systems and Procedures Association, Dec. 1953. Presented before that Association at Chicago, Ill., Nov. 4, 1953, and before the Econometric Society, Montreal, Canada, Sept. 11, 1954.

## Title & Abstract

## Publication No. and Date

Beckmann, M. and T. A. Marschak AN ACTIVITY ANALYSIS APPROACH TO LOCATION THEORY

P-649 April 5, 1955

An application of linear activity analysis to short-run locational problems by determining (1) the profit-maximizing locational decisions of a firm operating branch plants and (2) the efficient and attainable distributions of final commodities over the regions. 38 pp. Illus. Published in the Proceedings of the Second Symposium on Linear Programming, Washington, D.C., Jan. 27-29, 1955.

Beckmann, M.
and

C. B. McGuire & C. B. Winsten

STUDIES IN THE ECONOMICS OF TRANSPORTATION

Examines the theoretical aspects of highway and railroad systems and develops concepts and methods for assessing the capabilities and efficiency of existing and projected traffic systems. 347 pp. Published by the Yale University Press, New Haven, Conn., 1956. \$4.00.

RM-1488 (AD 90419) May 12, 1955

RM-1136-1

(AD 96720)

Oct. 12, 1954

#### Publication No. Author(s) Title & Abstract and Date ON THE TERRITORIAL COVERAGE OF SOVIET RM-154 Bergson, A. and OFFICIAL STATISTICS FOR YEARS SINCE 1939 May 4, 1949 H. Heymann, Jr. An examination of the Soviet territorial changes since 1939 and the comprehensiveness of Soviet statistics after that year. 9 pp. Illus. Bergson, A. PROFITS AND SUBSIDIES IN SOVIET ECONOMIC RM-393 and ACCOUNTS (ATI 210645) H. Heymann, Jr. May 19, 1950 A discussion and explanation of Soviet practices in computing total profits of economic organizations in the USSR. National-product calculations are reworked to take into account the unusual practice of not deducting losses. 41 pp. Bergson, A. PRICES OF IRON AND STEEL PRODUCTS IN THE RM-802 SOVIET UNION, 1928-1950: A SUMMARY REPORT and (ATI 210411) E. L. Turgeon March 26, 1952 An extension of RM-767-1 (Rev. 1954) and RM-778-1 (Rev. 1955). Computes index numbers for the iron and steel industry generally, including ordinary and quality rolled steel and castings. 14 pp. Illus. Bergson, A. SOVIET NATIONAL INCOME AND PRODUCT. 1954 and 1940-1948 H. Heymann, Jr. Columbia University Press, New York. 261 pp. Tables. \$5.00 Part of a broader examination to determine the war potential and vulnerabilities of the USSR economy. Data are compiled on (1) national economic accounts, i.e., sector and global accounts of incomes and their disposition, and (2) the adjusted factor cost. i.e., unit cost at factor price corresponding on the average to relative factor pro-

ductivities in different economic sectors. Previously published as R-253 (AD 90415),

PRICES OF CEMENT IN THE SOVIET UNION.

For abstract, see same title under

June 1953.

1928-1950

Bernaut.

Bergson, A.

R. Bernaut

with

Author(s)	Title & Abstract	Publication No.
Bergson, A. with R. Bernaut	PRICES OF PAINTS IN THE SOVIET UNION, 1928-1950 For abstract, see same title under Bernaut.	RM-1071-1 (AD 96718) Dec. 7, 1954
Bergson, A. and E. L. Turgeon	PRICES OF ORDINARY ROLLED STEEL IN THE SOVIET UNION, 1928-1950  Part of a larger study concerned with wholesale prices which may ultimately provide a basis for the calculation of various deflators for components of Soviet national income data. Discusses the changes in wholesale rolled-steel prices in the USSR from 1928-1950. 88 pp. Tables.	RM-767-1 (AD 96723) Dec. 10, 1954
Bergson, A. and R. Bernaut	PRICES OF BASIC CHEMICAL PRODUCTS IN THE SOVIET UNION, 1928-1950  A study of the changes in Soviet wholesale chemical prices during the period 1928-1950. Helps to determine a basis for calculating various deflators for national income data expressed in current rubles. 43 pp. Tables.	RM-920-1 (AD 96721) Dec. 17, 1954
Bergson, A. and E. L. Turgeon	PRICES OF QUALITY ROLLED STEEL IN THE SOVIET UNION, 1928-1950  A supplement to RM-767-1. 67 pp. Tables.	RM-778-1 (AD 96722) Feb. 1, 1955
Bergson, A. with E. L. Turgeon & R. Bernaut	PRICES OF MISCELLANEOUS BASIC INDUSTRIAL PRODUCTS, USSR, 1928-1950  For abstract, see same title under Turgeon.	RM-1482 (AD 90549) May 9, 1955
Bergson, A. with E. L. Turgeon	PRICES OF NONFERROUS METALS IN THE SOVIET UNION, 1928 TO 1950  For abstract, see same title under Turgeon.	RM-1030-1 (AD 96717) June 9, 1955
Bergson, A. and R. Bernaut & E. L. Turgeon	BASIC INDUSTRIAL PRICES IN THE USSR, 1928-1950: TWENTY-FIVE BRANCH SERIES AND THEIR AGGREGATION  An extension of previous investigations concerned with index numbers of prices for different branches of Soviet basic industry from 1928-1950. The study is a compendium of these publications and aggregates the branch series into corresponding series for major industries and industry groups. 129 pp. Tables.	RM-1522 (AD 87546) Aug. 1, 1955

Author(s)	Title & Abstract	Publication No.
Bergson, A.	ABBREVIATIONS FOR PRICE HANDBOOKS USED IN RAND STUDIES OF THE PRICES OF SOVIET BASIC INDUSTRIAL GOODS	RM-1557 (AD 87815) Sept. 27, 1955
	A list of the abbreviations used in RAND studies on the prices of Soviet basic industrial goods, together with the titles of the price handbooks to which the abbreviations refer. 4 pp.	
Bergson, A. and R. Bernaut &	PRICES OF BASIC INDUSTRIAL PRODUCTS IN THE USSR, 1928-1950	P-789 Jan. 12, 1956
E. L. Turgeon	Part of a broader investigation to derive index numbers for use in deflating current ruble national income data. Concerns Soviet industrial price trends from 1928-1950. 55 pp. Illus. Published in The Journal of Political Economy, Aug. 1956.	
Bergson, A. with E. L. Turgeon	PRICES OF BASIC INDUSTRIAL GOODS IN THE USSR, 1950 TO 1956: A PRELIMINARY REPORT For abstract, see same title under Turgeon.	RM-1919 (AD 144262) June 12, 1957.
Bergson, A. and H. Heymann, Jr. & O. Hoeffding	SOVIET NATIONAL INCOME AND PRODUCT, 1928-1948: REVISED DATA  Presents the revised current price estimates for 1928-1948 as calculated from recently published Soviet statistical data. Provides a connecting link between previous RAND research studies on Soviet national income and Bergson's book The Real National Income of Soviet Russia since 1928. 132 pp. Illus.	RM-2544 (AD 253000) Nov. 15, 1960
Bergson, A.	SOVIET NATIONAL INCOME	P-2148-1 Oct. 1961
	Attempts to determine Soviet national income from 1928-1958 by a comparative evaluation of the Soviet rate of growth of total output and the rate of growth of factor productivity. Compares trends in USSR and U.S. national income. 64 pp. Tables. Presented before the	

Conference on Economics of Soviet Industrialization at Princeton, N.J., May 6-8, 1961.

## Author(s)

## Title & Abstract

## Publication No. and Date

Bergson, A.

THE REAL NATIONAL INCOME OF SOVIET RUSSIA SINCE 1928
Harvard University Press, Cambridge, Mass. 488 pp. Illus. \$8.75

Book, 1961 & R-367-PR (AD 268170)
Oct. 1961

An assessment of the strength of the Soviet economy as a whole and its various sectors in an attempt to estimate the strength of those elements which contribute to military capability. The method used compiles income and outlay data for the USSR in accord with the principles of national income accounting familiar in the United States and other Western countries. The period covered makes possible long-term comparisons of the economic growth rates between the U.S. and the Soviet Union, and provides a base from which improved estimates of future developments and their strategic implications can be made.

Author(s)	Title & Abstract	Publication No.
Bernaut, R. and A. Bergson	PRICES OF CEMENT IN THE SOVIET UNION 1928-1950  Part of a program to determine the war potential and vulnerabilities of Soviet economy. Discusses changes in wholesale cement prices from 1928-1950. 58 pp. Tables	RM-1136-1 (AD 96720) Oct. 12, 1954
Bernaut, R.	PRICES OF BRICKS IN THE SOVIET UNION, 1928-1950  A study which deals with compiled data on wholesale price changes in Soviet bricks from 1928 to 1950. 46 pp. Tables.	RM-1186-1 (AD 96719) Dec. 1, 1954
Bernaut, R. and A. Bergson	PRICES OF PAINTS IN THE SOVIET UNION, 1928-1950  A study of the changes in Soviet wholesale paint prices. Part of a larger project which attempts to determine a basis for calculating various deflators for national income data expressed in current rubles. 83 pp. Tables.	RM-1071-1 (AD 96718) Dec. 7, 1954
Bernaut, R. with A. Bergson	PRICES OF BASIC CHEMICAL PRODUCTS IN THE SOVIET UNION, 1928-1950 For abstract, see same title under Bergson	RM-920-1 (AD 96721) .Dec. 17, 1954
Bernaut, R.	PRICES OF FUELWOOD AND WOOD PRODUCTS IN THE USSR, 1928-1950  Part of a broader investigation to provide a basis for calculating rates of change in the output of various sectors of the Russian economy. Examines wood prices in the USSR from 1928-1950. 90 pp. Tables.	RM-1421 (AD 86707) Feb. 1, 1955
Bernaut, R. with E. L. Turgeon & A. Bergson	PRICES OF MISCELLANEOUS BASIC INDUSTRIAL PRODUCTS, USSR, 1928-1950 For abstract, see same title under Turgeon.	RM-1482 (AD 90549) May 9, 1955
Bernaut, R. with A. Bergson & E. L. Turgeon	BASIC INDUSTRIAL PRICES IN THE USSR, 1928: 1928-1950: TWENTY-FIVE BRANCH SERIES AND THEIR AGGREGATION For abstract, see same title under Bergson.	RM-1522 (AD 87546) Aug. 1, 1955
Bernaut, R. with A. Bergson & E. L. Turgeon	****** ****	P-789 Jan. 12, 1956

Author(s)	Title & Abstract	Publication No.
Blackman, J. H.	A TENTATIVE INPUT-OUTPUT TABLE FOR THE USSR, 1941 PLAN For abstract, see same title under Kaplan.	RM-924 (ATI 210756) Sept. 2, 1952
Blackman, J. H.	TRANSPORTATION	P-288 Dec. 17, 1952
	Discusses the magnitude and nature of transport services required by the Soviet economy to determine current levels of activity. Analyzes long-term growth prospects of transportation to explore implications of various hypothesized levels of production. 47 pp. Illus. Published in Soviet Economic Growth, A. Bergson (ed.), Row, Peterson & Company, Evanston, Ill., 1953, \$6.00. Presented before a meeting at Arden House, Harriman, N.Y., May 23-25, 1952.	
Brown, W. M.	AN APPROXIMATION METHOD FOR LARGE-ANGLE SCATTERING OF HIGH-ENERGY SCALAR AND VECTOR WAVES	P-1645 March 18, 1959

Presents an approximation method for large-angle scattering of high-energy scalar and vector waves. Part I develops an approximation method for evaluating large-angle scattering that reduces the problem of computing the scattering amplitude from a volume integration to a single quadrature. Part II extends the modified W.K.B. formulation for the scattering of scalar waves to the problem of vector-wave scattering. 79 pp. Illus.

Author(s)	Title & Abstract	Publication No.
Capron, W. M. with K. J. Arrow	DYNAMIC SHORTAGES AND PRICE RISES: THE ENGINEER-SCIENTIST CASE For abstract, see same title under Arrow.	P-1365 Mey 7, 1958
Capron, W. M. with A. A. Alchian & K. J. Arrow	AN ECONOMIC ANALYSIS OF THE MARKET FOR SCIENTISTS AND ENGINEERS For abstract, see same title under Alchian	RM-2190 June 6, 1958
Chapman, J. G.	THE REGIONAL STRUCTURE OF SOVIET RETAIL PRICES	RM-425 (ATI 210649) July 20, 1950
	A preliminary study of the retail prices in the Soviet Union to determine the representativeness of Moscow price movements. Regional structure of prices and changes are described. Discusses rationale of Soviet regional price-fixing and changes in the prices in relation to average prices for the entire USSR. 144 pp. Illus.	
Chapman, J. G.	RETAIL PRICES OF MANUFACTURER CONSUMER GOODS IN THE USSR, 1937-1948	RM-803-1 (ATI 210412) Dec. 12, 1952
	An index of the change in retail prices of manufactured goods in the USSR, 1937-1948. This index, together with the one of Soviet retail food prices in RM-707-1 (below), provides a basis for comparing the volume of retail sales in 1937 and 1948 in "real" term 120 pp. Illus.	
Chapman, J. G.	RETAIL FOOD PRICES IN THE USSR, 1937-1948	RM-TOT-1 Jan. 13, 1953
	An attempt to measure change in retail food prices in the USBR, 1937-1948. This index, based on Moscow prices, relates to official food prices in state and cooperative stores and restaurants but does not cover prices on the free collective farm market. 117 pp. Illus.	
Chapman, J. G.	REAL WAGES IN THE SOVIET UNION, 1938-1952	P-449 Oct. 17, 1953
	Contains data on changes in the cost of living and in real wages for the years 1928, 1937, 1948, and 1952. 51 pp. Illus. Published in The Review of Economics and Statistics, May 1954.	

# Title & Abstract

# Publication No.

# Chapman, J. G.

CONSUMPTION LEVELS IN THE SOVIET UNION AND THE UNITED STATES

P-2133-1 Sept. 1961

A comparison of the levels and patterns of consumption in the Soviet Union and in the United States. The major similarities and differences are also analyzed. Considering Soviet development as a case of economic growth, an attempt is made to indicate those aspects of Soviet consumption which appear to be primarily related to the stage and level of economic growth. 78 pp. Tables. Presented before the Conference on Economics of Soviet Industrialization at Princeton, N.J., May 6-8, 1961, and published in the proceedings of the conference.

Author(s)	Title & Abstract	Publication No.
Clark, P. G.	VULNERABILITY AND RECUPERATION OF A REGION- AL ECONOMY: A STUDY OF THE IMPACT OF A HYPOTHETICAL ATOMIC ATTACK ON NEW ENGLAND	RM-1809 (AD 123549) Oct. 12, 1956
	An attempt to determine the economic consequences of bombing attacks on a region of the nation. Both heavy and light bombing attacks on New England are postulated, with and without warning. The purpose of the study is primarily to explore a method of analysis, not to make an explicit forecast. 99 pp. Tables.	
Clark, P. G.	CIVIL DEFENSE FOR WILLIAMSTOWN?	P-1719 June 8, 1959
	A discussion of the prevailing beliefs that are causing popular apathy in the United States toward civil defense measures. 8 pp. Published in the Williams Alumni Review, July 1959.	
Clark, P. G. with D. V. T. Bear	THE IMPORTANCE OF INDIVIDUAL INDUSTRIES FOR DEFENSE PLANNING For abstract, see same title under Bear.	P-2093 Sept. 15, 1960
Clark, P. G. with D. V. T. Bear	THE IMPORTANCE OF INDIVIDUAL INDUSTRIES FOR DEFENSE PLANNING: SUPPLEMENTAL DATA For abstract, see same title under Bear.	P-2124 Oct. 18, 1960

Author(s)	Title & Abstract	Publication No.
Cosper, G.	An examination of the effects on labor incentive of various possible kinds of change in the income tax structure and the implications of these results for fiscal policy in mobilization. 27 pp. Illus. Published in the Quarterly Journal of Economics, Feb. 1952. Presented before the Econometric Society at Santa Monica, Calif. Aug. 2, 1951.	P-200 March 7, 1951
Cooper, G. and R. N. McKean	ARE WE SURE ABOUT DISPERSAL?  A preliminary appraisal of dispersal policy. Certain of its social objectives are discussed, and several alternatives to dispersal are indicated. 29 pp.	P-301 May 19, 1952
Cooper, G. and R. N. McKean	IS DISPERSAL GOOD DEFENSE?  A companion study to P-301 (above).  16 pp. Published in Fortune, Nov. 1954.	P-548 Sept. 15, 1954
Cowen, L. G.	THE ECONOMIC DEVELOPMENT OF MOROCCO  P-1522 Oct. 21, 1958  Covers the history of the country, the organization of the French Protectorate in 1912, resources and industry, investment, foreign trade, the impact of independence on Moroccan labor, the role of government in economic development, and the future development of Morocco. Concludes that if Morocco continues to respond to the demands of industrialization, its future economic development will rest on a solid foundation. 139 pp. Illus.	

# Title & Abstract

Publication No.

Debreu, G.

THE COEFFICIENT OF RESOURCE-UTILIZATION

P-206 April 1951

An attempt to determine numerically the "dead loss" associated with a nonoptimal situation of an economic system. The treatment is based on vector set properties in the commodity space. 32 pp. Illus. Published in Econometrica, July 1951. Presented before the Econometric Society at Cambridge, Mass., Aug. 1950.

Debreu, G.

A CLASSICAL TAX-SUBSIDY PROBLEM

P-357

Dec. 15, 1952

A discussion of a classical tax-subsidy problem in an economic system in which 1 commodities are transformed into each other by n production-units and consumed by m consumption-units. 15 pp. Published in Econometrica, Jan. 1954. Presented before the Econometric Society at Minneapolis, Minn. Sept. 6, 1952.

DeHaven, J. C., and

A BRIEF SURVEY OF THE TECHNOLOGY AND ECO-NOMICS OF WATER SUPPLY R-258 1955

L. A. Gore & J. Hirshleifer

A RAND Corporation study which delineates the problem of water supply and indicates the more important areas of research in this field. The hydrologic cycle, together with theoretical aspects, is examined to provide a background for assessing the total natural water available to the U.S. and its distribution by source. The present and future costs of producing fresh water from saline by known technically feasible progesses are estimated. 62 pp. Illus.

DeHaven, J. C. and J. Hirshleifer FEATHER RIVER WATER FOR SOUTHERN CALIF CALIFORNIA

P-1034

Feb. 20, 1957

Estimates the role which water supply from the Feather River Project should play in the calculations of Southern Calif. Concludes that alternative measures have not been adequately considered and that no convincing economic justification of the project has yet been presented. 27 pp. Tables. Published in the Land Economics, Aug. 1957. Presented before the Econometric Society at Cleveland, Ohio, Dec. 27, 1956.

Author(s)	Title & Abstract	Publication No and Date
DeHaven, J. C. with J. Hirshleifer & J. Milliman	WATER SUPPLY: ECONOMICS, TECHNOLOGY AND POLICY For abstract, see same title under Hirshleifer.	Book, 1960
Demsetz, H.	ECONOMIC GAINS FROM STORM WARNINGS: TWO FLORIDA CASE STUDIES  Assesses the losses incurred annually by the City of Miami and the Florida Power and Ligh Company as a result of damage caused by trop storms in the Miami area. Estimates net economic gains derivable from storm warning sys Indicates that climatological data, used app priately, can bring about still unrealized enomic gains, even without improvements in observation techniques. 50 pp. Illus.	tical tems.
Denny, B. C. with E. G. Mesthene	SCIENCE AND STATECRAFT For abstract, see same title under Mesthene.	P-2462-1 Oct. 1961
Domar, E. D.	DEPRECIATION, REPLACEMENT, AND GROWTH  Discusses the growth of investment and capital stock subject to depreciation and periodic replacement. 54 pp. Illus. Published in The Economic Journal, March 1953.	P-325 Sept. 11, 1952
Dorfman, R., and P. A. Samuelson & R. M. Solow	LINEAR PROGRAMMING AND ECONOMIC ANALYSIS McGraw-Hill Book Company, Inc., New York. 527 pp. Tables. \$10.00.  Shows that linear programming is related to traditional economic theory without delving into higher mathematics. Sets forth the basic concepts, assumptions, and leading ideas of linear programming, with problems and methods of solution. Includes inputoutput analysis, game theory, and matrix algebra.	Book, 1958

### Title & Abstract

# Publication No. and Date

Eason, W. W.

TRENDS AND PROSPECTS OF THE SOVIET POPULATION AND LABOR FORCE

P-289 Dec. 17, 1952

A discussion of the trends and prospects in Soviet labor supply as indicated by changes in the sex and rural-urban structure of the working age population, and by industrial labor force requirements. Considers 1926-39, 1939-50, and 1950-70 time periods. 79 pp. Illus. Published in Soviet Economic Growth, ed. by A. Bergson. Row, Peterson & Co., Evanston, Ill., 1953, \$6.00. Presented before a meeting at Arden House, Harriman, N.Y., May 23-25, 1952.

Eason, W. W.

THE AGRICULTURAL LABOR FORCE AND POPULATION RM-1248
OF THE USSR: 1926-1941 (AD 854)

RM-1248 (AD 85428) May 4, 1954

Describes the economic and social structure of Soviet agriculture during the first three five-year plans measured in terms of the size and age-sex composition of the population. Measures trends in USSR economic development. 217 pp. Tables.

Eason, W. W.

EMPLOYMENT AND UNEMPLOYMENT IN THE USSR

P-551 March 14, 1955

An evaluation of the results of the Soviet 1926 labor force census, the principal changes occurring through 1939, several measures of the total labor force during the late 1930's, and possible indications of unemployment. 59 pp. Tables. Published in Policies to Combat Depression, Universities-National Bureau Committee for Economic Research, Princeton University Press, Princeton, N. J., 1956. \$8.50. Presented before the Universities-National Bureau Committee Conference at Princeton University, Sept. 17-18, 1954.

## Title & Abstract

# Publication No. and Date

Ellsberg, D.

THE CRUDE ANALYSIS OF STRATEGIC CHOICES

P-2183 Dec. 15, 1960

Analyzes some of the significant implications for U.S. military objectives of specific military choices, such as the introduction of a new weapon system, deployment, operational procedures or protective measures. 13 pp. Presented before the American Economic Assn. at St. Louis, Mo., Dec. 1960, and published in the Proceedings, May 1961.

Ellsberg, D.

RISK, AMBIGUITY, AND THE SAVAGE AXIOMS

P-2173 Aug. 1961

Discusses a class of situations in which many reasonable people neither wish nor tend to conform to the Savage postulates of rational behavior. There is no way to infer meaningful probabilities for events from their choices in these situations, nor can they be described as acting as if they were maximizing the mathematical expectation of utility. Such self-consistent behavior violating the Savage axioms seems to occur in situations that can be described as highly ambiguous. 42 pp. Published in the Quarterly Journal of Economics, Nov. 1961.

## Title & Abstract

Publication No. and Date

Enke, S.

INTERNATIONAL COMMODITY EQUILIBRIUM: SOLUTION BY ELECTRIC ANALOGUE

P-117 Dec. 12, 1949

Evaluates an electric analogue as a prediction factor in equilibrium solution for region gases. Economic consequences may be caused by schedule changes in the supply or demand in any region or by a variation in freight cost between two regions. 10 pp. Illus. Published in Econometrica, Jan. 1951.

Enke, S.

SOME ECONOMIC ASPECTS OF FISSIONABLE MATERIAL

P-462

Nov. 25, 1953

A theoretical discussion of an optimum program for the production, allocation, and use of fissionable material according to economic precepts--once important political and military decisions have been made. In particular, U-235 and PU-239, which involve numerous economic suboptimizations, are discussed. 16 pp. Illus. Published in The Quarterly Journal of Economics, May 1954.

Enke, S.

CAPITAL INTENSITY AS A MITIGATION OF INFERIOR LABOR: A GENERAL THEOREM

P-2118 Oct. 10, 1960

A discussion of Hirschman's thesis on the contrast between continuous-process activities with other productive activities in which work sequences are less rigidly determined. The author paraphrases this argument, suggests modifications, and presents a more general theorem. 9 pp. Illus.

Enke, S.

PRODUCTION FUNCTIONS AND CAPITAL DEPRECIATION P-2226

Feb. 16, 1961

A discussion of macroeconomic theory, which has tended to stress the determination and distribution of net income. The moral of this essay is that production functions that include capital stocks as an input can only be output equations because of the nature of capital's contribution to production. Such output statements are independent of depreciation. 21 pp. Illus.

## Title & Abstract

# Publication No. and Date

#### Enthoven, A. C.

THE ECONOMICS OF NAVY PAY

P-1051 April 2, 1957

A defense of the principle of differential pay in the Nevy, based on supply and productivity considerations. Argues that the primary objective in the choice of salaries ought to be the maximization of the total effectiveness of the service as a fighting force, within the limitations of the budget. Implies that each man's salary should be proportional to what he adds to total effectiveness. 18 pp.

#### Enthoven, A. C.

SUPPLY AND DEMAND AND MILITARY PAY

P-1186 Sept. 30, 1957

A study of the economic aspects of recent proposals to increase military salaries. Argues that more military effectiveness could be obtained if more money were spent on hiring scarce technicians (and correspondingly less on unskilled manpower) and that if more were spent on personnel and

less on equipment. 14 pp. Published as An Economist's View of the Cordiner Recommendations, in Air Force, Jan. 1958.

A suggestion that Congress instruct the

#### Enthoven, A. C.

THE MATHEMATICS OF MILITARY PAY

P-1100 Nov. 11, 1957

Services to follow a policy of maximizing military effectiveness within the limitations of the personnel budget. The optimum allocation of funds can be determined by beginning with the current program and comparing the actual over-all effectiveness of the service with that which would result from slightly different allocations. The fact that the Services can already decide what they consider to be an optimum balance between different ranks, ages, and

specialties indicates that this theory is

Enthoven, A. C.

MONEY AND THE INTEREST RATE IN A NEOCLASSICAL WORLD

possible. 30 pp. Tables.

P-1567 Dec. 4, 1958

Presents the argument that the action of the monetary system changes the relative supplies of the various financial assets in the hands of the private sector. In turn, this affects the rate of interest and other variables. If the rate of consumption

(cont'd.)

#### Title & Abstract

Publication No. and Date

### Enthoven, A. C. (cont'd)

of the household sector is influenced by its financial asset holdings, and if the investment decisions of firms are affected by the extent to which they are in debt, then the actions of the monetary system can be neutral only in very special cases. 21 pp. Presented before the Econometric Society at Chicago, Illinois, December 20, 1950.

#### Enthoven, A. C. and

## DEFENSE PLANNING AND ORGANIZATION

P-1640 July 26, 1959

H. S. Rowen

A discourse on the organization of the Dept. of Defense, its roles and missions and the mechanisms through which the business of defense is conducted. Shortcomings for handling allocation problems are examined, and proposals for reorganization are presented. 55 pp. Tables. Presented before the Universities - National Bureau of Economic Research Conference at the University of Virginia, Charlottesville, Va., April 10-11, 1959, and published in its proceedings: Public Finance: Needs, Sources and Utilization, Princeton University Press, 1961.

#### Enthoven, A. C.

#### THE SIMPLE MATHEMATICS OF MAXIMIZATION

P-1833 Nov. 3, 1959

An economic approach to the problem of military choice: that of allocating a fixed budget among alternative strategic weapon systems, or of finding the maximum of some relevant measure of strategic airpower. 70 pp. Illus. Incorporated in The Economics of Defense in the Nuclear Age, Harvard University Press, Cambridge, Mass., 1960.

#### Enthoven, A. C. and

K. J. Arrow

QUASI-CONCAVE PROGRAMMING

For abstract, see same title under Arrow.

P-1847 Dec. 16, 1959

## Fagg, D. R. and C. Kaysen &

R. N. McKean

### Title & Abstract

# WHAT THE FACTORY WORKER KNOWS ABOUT HIS FACTORY

An exploratory attempt to measure the variability in the "knowledge" that workers have about their factory. Interviews with workers showed that the range of answers to specific questions was very wide and that the median answer was often far from the correct one. In general, the more abstract the question, the greater was the variability and bias. 46 pp. Illus. Published in The Journal of Business, July 1958.

Publication No.

P-1275 Feb. 2, 1958

## Title & Abstract

Publication No. and Date

#### Ferguson, A. R.

MECHANICS OF SOME LIMITED DISARMAMENT MEASURES

P-2140 Nov. 21, 1960

Attempts to determine how disarmament measures affect the economies of military power. Suggests that the broader the definition of weapon systems limited by an arms control measure, the greater is its effect if successive expansion in scope is possible. 19 pp. Illus. Presented before the American Economic Association at St. Louis, Mo., Dec. 28-30, 1960.

#### Ferguson, A. R. TACTICS IN A LOCAL CRISIS

RM-3034-ISA (AD 288909) Sept. 1962

Presents a model of the interrelationships among strategic, tactical, economic, and political factors in pursuing a nation's interests in cases of local aggression against it or its allies. The analysis deals specifically with the manipulation of the West's military and other assets in local crises so as to improve the West's bargaining position and its relative power position. Explores conditions under which forceful actions can be taken with little risk of extensive violence; seeks to identify means to control escalation in the event of violence; and describes the general characteristics of moves suitable for the West in a number of substantially differing political and military situations. 130 pp. Illus.

#### Ferguson, A. R. DISARMAMENT AND DETERRENCE

P-2553-1 Nov. 26, 1962

Discusses deterrence, disarmament, and approaches to peace. Views these factors as complementary elements in solving problems posed by political conflict between the democracies and the Soviet Union. Concludes that neither deterrence nor arms control can solve the underlying political problems but can serve in other ways. 41 pp. Presented before a Seminar on Arms Control and Disarmament at Reed College, Portland, Ore., March 30-31, 1962.

# Title & Abstract

# Publication No.

Fisher, G. H. and

ON PREDICTING A COMBINATION OF OUTPUTS AND FINAL DEMANDS BY INPUT-OUTPUT

RM-954 (ATI 210479) Oct. 3, 1952

H. M. Markowitz

Presents a matrix which predicts final demands from estimates of outputs and outputs from estimates of final demands. 4 pp.

Flood, M. M.

ILLUSTRATIVE EXAMPLE OF APPLICATION OF KOOPMAN'S TRANSPORTATION THEORY TO SCHED-ULING MILITARY TANKER FLEET

RM-267 Oct. 17, 1949

An analysis of the operation of a U.S. military tanker fleet to determine optimum routes throughout the world for delivery of bulk petroleum products to the military. 18 pp. Illus.

## Title & Abstract

Publication No. and Date

Galenson, W.

RUSSIAN LABOR PRODUCTIVITY STATISTICS

P-126 Jan. 17, 1950

An analysis of Russian productivity statistics to 1949. Examines (1) the concepts employed by Russian statisticians in computing labor productivity, (2) the trend of labor productivity since the inception of the five-year plans, and (3) the productivity changes in the coal mining industry to enumerate problems of evaluation productivity statistics.

30 pp. Published in the Industrial and Labor Relations Review, July 1951.

Galenson, W.

TRENDS IN SOVIET INDUSTRIAL PRODUCTIVITY

P-276

1954

March 6, 1952

Examines past trends in Soviet industrial productivity, compares absolute productivity levels in Soviet and American industry, and suggests possible productivity trends in the USSR during the next two decades. 27 pp. Illus. Published in Soviet Economic Growth, ed. by A. Bergson. Row, Peterson & Co., Evanston, Ill., 1953. \$6.00. Presented before a meeting at Arden House, Harriman, N. Y., May 23-25, 1952.

Galenson, W.

LABOR PRODUCTIVITY IN SOVIET AND AMERICAN INDUSTRIES Columbia University Press, N.Y., 273 pp. Tables. \$5.50.

Traces the development of labor productivity in numerous Soviet industries since 1928, compares U.S. and USSR productivity in these industries, speculates on the future trends in Soviet productivity. Also published as R-257 (AD 90417).

Galenson, W.

INDUSTRIAL TRAINING IN THE SOVIET UNION

RM-1479 (AD 90544) May 5, 1955

A discussion of Soviet vocational training since 1921. Considers, in particular, the magnitude of the industrial training program, forms of direct factory training, formal vocational education, and the dissemination of technical information within the USSR.
42 pp. Tables. Also published as P-729 and in the Industrial and Labor Relations Review, July 1956.

Author(s)	Title & Abstract	Publication No. and Date
Gerschenkron, A. and A. E. Nimitz	A DOLLAR INDEX OF SOVIET PETROLEUM OUTPUT, 1927-28 to 1937  Attempts to measure the Soviet output of petroleum products during the given time	RM-804 (ATI 210413) April 4, 1952
	period. U.S. dollars of 1939 purchasing power are used as the unit of measurement. 210 pp. Illus. (See also RM-1042 under Nimitz.)	
Gerschenkron, A. and A. E. Nimitz	A DOLLAR INDEX OF SOVIET IRON AND STEEL OUTPUT, 1927/28-1937	RM-1055 (ATI 210784) March 13, 1953
	A recomputation of Soviet iron and steel industry output from 1927/28-1937, expressed in terms of U.S. dollars of 1939 purchasing power. 266 pp. Tables.	3, 2,7,5
Gerschenkron, A.	A DOLLAR INDEX OF SOVIET ELECTRIC-POWER OUTPUT	RM-1282 (AD 86919) June 24, 1954
	An attempt to measure Soviet power output in dollars from 1927/28 to 1937, so that power output may be combined with the output, measured in dollars, of other branches of Soviet heavy industry. One of several studies expected to provide a basis for calculating the dollar equivalent of current Soviet industrial and military output. 104 pp. Tables.	
Gerschenkron, A.	SOVIET HEAVY INDUSTRY: A DOLLAR INDEX OF OUTPUT, 1927/28-1937	P-560 Aug. 30, 1954
	An attempt to measure the growth of output in Soviet heavy industry. Considers the machine building, iron and steel, petroleum, coal, and electric power industries. 26 pp. Tables. Published in The Review of Economics and Statistics. May 1955.	<u>s</u>

and Statistics, May 1955.

Author(s)	Title & Abstract	Publication No. and Date
Girshick, M. A. with A. Skogstad & A. Kaplan	THE PREDICTION OF SOCIAL AND TECHNOLOGICAL EVENTS For abstract, see same title under Skogstad.	P-93 April 1, 1949
Goldhamer, H. and A. W. Marshall	PSYCHOSIS AND CIVILIZATION Free Press, Glencoe, Ill., 126 pp. Tables and Charts. \$4.00.	1953
	Two studies in the frequency of mental disease. The first shows that in the age group under 50 years, there has been no increase in the frequency of psychoses over the past 100 years. The second examines in greater detail the frequency of major mental illnesses today and presents a convenient means of expressing this in terms of the risk of such illness during an individual's lifespan or some particular portion of it. Presents a new expectancy table.	
Goldsen, J. M. with B. H. Klein, et al.	COMMUNICATIONS SATELLITES AND PUBLIC POLICY: AN INTRODUCTORY REPORT For abstract, see same title under Klein.	RM-2925-NASA (AD 275936) Dec. 1961
Gore, L. A. with J. C. DeHaven & J. Hirshleifer	A BRIEF SURVEY OF THE TECHNOLOGY AND ECONOMICS OF WATER SUPPLY For abstract, see same title under DeHaven.	R-258 1955

## Title & Abstract

Publication No. and Date

Hald, M. W.

SOCIAL CHARGES IN THE EEC COUNTRIES: SOME ECONOMIC ASPECTS

P-1439 July 22, 1958

A discussion on the economic aspects of "social charges," defined as the costs to employers of the fringe benefits of worker remuneration. The study is confined to the possible economic effects of these charges to countries of the European Economic Community. Some possible effects of the development of social charges are explored, and areas for future research are indicated. 29 pp.

Hald, M. W.

A SELECTED BIBLIOGRAPHY ON ECONOMIC DEVELOP- RM-2096-1 MENT AND FOREIGN AID (AD 206551)

Nov. 26, 1958

A selective bibliography of 1,500 items on economic and other aspects of growth and development in underdeveloped areas and on the policies of the U.S. and other agencies in fostering development. Primarily concerned with the period 1950-1957, with emphasis on the last five years. Includes an index by country. 103 pp.

Hald, M. W.

THE EXPORT-IMPORT BANK AND DEVELOPMENT LENDING

P-1668 April 15, 1959

A review of the evolution of the policies and operations of the Export-Import Bank (the principal agency of the U.S. government engaged in international finance) as a basis for evaluating its appropriateness as a development loan agency to aid underdeveloped countries. 23 pp. Tables.

Hanunian, N. with

ESTIMATING OUTPUT FROM FLOOR SPACE: FEASIBILITY

RM-563 (ATI 210689)

March 13, 1951

For abstract, see same title under Alchian.

A. A. Alchian & A. Skogstad

Author(s)	Title & Abstract	Publication No.
Heymann, H., Jr. with A. Bergson	ON THE TERRITORIAL COVERAGE OF SOVIET OFFICIAL STATISTICS FOR YEARS SINCE 1939 For abstract, see same title under Bergson	RM-154 May 4, 1949
Heymann, H., Jr. with A. Bergson	PROFITS AND SUBSIDIES IN SOVIET ECONOMIC ACCOUNTS For abstract, see same title under Bergson	RM-393 (ATI 210645) 1.May 19, 1950
Heymann, H., Jr.	A TENTATIVE INPUT-OUTPUT TABLE FOR THE USSR, 1941 PLAN For abstract, see same title under Kaplan.	RM-924 (ATI 210756) Sept. 2, 1952
Heymann, H., Jr. with A. Bergson	SOVIET NATIONAL INCOME AND PRODUCT, 1940-1948 For abstract, see same title under Bergson	1954
Heymann, H., Jr.	SOVIET TRADE AND AID: TRICKLE OR TORRENT?	P-1047 Feb. 14, 1957
	An investigation of (1) the relationship between the growth of the Soviet economy and its participation in foreign trade and technical assistance, and (2) the likely impact of the Soviet economic offensive. 12 pp. Tables. Revised version of a formal statement presented at Congressional Hearings, Dec. 13, 1956. Published in the Hearings before the Subcommittee on Foreign Economic Policy of the Joint Economic Committee, Congress of the United States, 84th Congress, 2nd Session, Dec. 10, 12, and 13, 1956. U.S. Government Printing Office, Washington, D. C.	
Heymann, H., Jr.	THE SOVIET ROLE IN INTERNATIONAL CIVIL AVIATION	RM-2213 (AD 156019) Dec. 4, 1957
	Discusses the vast Soviet program of global air-transport expansion designed to undermine U.S. aviation leadership. Two question are examined: (1) What do the recent development trends in the USSR tell us about the Soviet ability to compete with equipment? and (2) From the viewpoint of international air routes, how serious are their ambitions, and how promising are their opportunities for developing a global air-transport network? 22 pp. Illus.	d.

## Title & Abstract

# Publication No.

Heymann, H., Jr.

FUTURE PROSPECTS FOR SOVIET ECONOMIC AID

P-1269 Jan. 31, 1958

Considers such aspects of Middle East development as: the size of current Soviet trade and aid effort; the Soviet role in machinery exports; the future of Soviet industrial exports to the under-developed countries; the fact that Soviet aid is not a quantitative but a qualitative threat; and future Soviet opportunities in the field of civil aviation. 17 pp. A summary a full text of a talk given at the 12th Annual Conference of the Middle East Institute in Washington, D.C., Jan. 31, 1958, and published in the transcript of that meeting.

Heymann, H., Jr.

A COMMENT ON "COSTS, FREIGHT RATES, AND LOCATION DECISIONS IN THE USSR"

P-1507 Oct. 3, 1958

A commentary on a paper presented by Holland Hunter before the Symposium on Economic Calculation and Organization in the USSR and Eastern Europe, June 17, 1958. Hunter shows how the structure of Soviet freight charges reflects the government's efforts to influence the economic behavior of producers and to assert the priority of planners' objectives over producers' preferences. 9 pp.

Heymann, H., Jr.

THE USSR IN THE TECHNOLOGICAL RACE

P-1754
July 20, 1959

An attempt to explain the rapid rate of Soviet progress in science and technology and to indicate some of its implications for the U.S. 15 pp. Presented before the National Strategy Conference for Reserve Officers at the National War College, Washington, D.C., July 20, 1959.

# Title & Abstract

Publication No. and Date

Heymann, H., Jr.

SOVIET FOREIGN AID AS A PROBLEM FOR U.S. POLICY

P-1769 Sept. 11, 1959

Discusses (1) our tendency to overlook the profound differences between Soviet and U.S. conceptions of the role and objectives of foreign aid, thereby drawing inappropriate conclusions for our own policy posture; (2) our overly apprehensive concern about Soviet "economic domination" and its effect on U.S. aid policy; and (3) our pressing need to develop more attractive answers of our own to those features of Soviet aid that account for much of its distinctive impact, thus rendering it politically innocuous. 22 pp. Presented before the American Political Science Assn. at Washington, D. C., Sept. 11, 1959.

Heymann, H., Jr.

COMMUNIST ECONOMIC SUBVERSION--A REAPPRAISAL

P-1943 Feb. 9, 1960

A reappraisal of the significance of Communist economic activity in less-developed countries for the SEATO area and for the Free World. Attempts to determine whether Soviet economic competition is communist, economic, or subversive. Suggests a possible solution for countering Soviet strategy. 18 pp. Presented before the Second SEATO Countersubversion Seminar at Lahore, Pakistan, Feb. 9, 1960.

Heymann, H., Jr. with

A. Bergson & O. Hoeffding

SOVIET NATIONAL INCOME AND PRODUCT, 1928-1948: REVISED DATA

For abstract, see same title under Bergson.

RM-2544 (AD 253000) Nov. 15, 1960

#### Title & Abstract

Publication No. and Date

### Heymann, H., Jr. AVIATION AND INTERNATIONAL RELATIONS

P-2479 Nov. 1961

Discusses some misconceptions concerning the link between U.S. commercial aviation and the nation's military security, and the contribution of aviation supremacy to our national prestige. Three U.S. foreign policy aims are presented, together with the challenges they pose for civil aviation. 14 pp. Presented before the Symposium on the Issues and Challenges of Air Transportation at Hartford, Conn., Nov. 2, 1961.

## Heymann, H., Jr.

AIR TRANSPORT AND ECONOMIC DEVELOPMENT: SOME COMMENTS ON FOREIGN AID PROGRAMS

P-2486 Dec. 1961

A description of the general nature of U.S. aviation involvement with underdeveloped countries. Some of its consequences are examined, and a few of the special problems that the air transport function poses for pursuit of economic development objectives are considered. 16 pp. Presented before the American Economic Association at New York, Dec. 28, 1961. Published in American Economic Review: Papers and Proceedings, May 1962.

### Title & Abstract

Publication No. and Date

Hirschman, A. O. and

C. E. Lindblom

ECONOMIC DEVELOPMENT, RESEARCH AND DEVELOP- P-1982 MENT, POLICYMAKING: SOME CONVERGING VIEWS

May 4, 1960

Examines the convergence between the views of Albert Hirschman on economic development, Burton Klein and William Meckling on technological research and development, and Charles Lindblom on policymaking in general. These three independent lines of work appear to challenge some widely accepted generalizations about what is variously described in the literature as the process of problem solving and decisionmaking. 28 pp. Illus.

Author(s)	Title & Abstract	Publication No. and Date
Hirshleifer, J. and J. A. Kershaw	THE ECONOMIC WAR POTENTIAL OF THE UNITED STATES AND THE SOVIET UNION  A comparison of the economic war potential	RM-367 (ATI 210373) April 17, 1950
	of the U.S. and USSR, estimated (1) for 1950 and (2) between 1955 and 1960. 32 pp. Illus.	
Hirshleifer, J.	WAR DAMAGE INSURANCE	P-519 May 1953
	Recommends that war damage insurance be offered to protect property-owners from losses attributed to enemy action. This would encourage private actions which will tend to reduce the physical and economic vulnerabilito enemy bombing. 21 pp. Published in The Review of Economics and Statistics, May 1953	ty
Hirshleifer, J. with A. W. Marshall	THE SUPPLY OF FEMALE LABOR IN WORLD WAR II For abstract, see same title under Marshall.	P-420 Feb. 5, 1954
Hirshleifer, J.	COMPENSATION FOR WAR DAMAGE: AN ECONOMIC VIEW	P-517 April 29, 1954
	A study of the effects of possible insurance or indemnity schemes which might be adopted on the resource allocation of the nation both before and after bombing. Indicates that a properly conceived insurance plan will encourage private actions in peacetime to reduce national vulnerability to bombing and conversely, a poorly conceived plan will tend to discourage expenditures designed to reduce vulnerability. 26 pp. Published in the Columbia Law Review, Feb. 1955.	
Hirshleifer, J. with J. C. DeHaven & L. A. Gore	A BRIEF SURVEY OF THE TECHNOLOGY AND ECO- NOMICS OF WATER SUPPLY For abstract, see same title under DeHaven.	R-258 1955
Hirshleifer, J.	THE EXCHANGE BETWEEN QUANTITY AND QUALITY	P-406 March 15, 1955
	An analysis of how general convex cost isoquants and resulting instabilities may be in the problem of quantity versus quality. Considers primarily the mathematical formulations of the cost function. 14 pp. Illus Published in The Quarterly Journal of Economics, November 1955.	

### Title & Abstract

Publication No. and Date

Hirshleifer, J.

SOME THOUGHTS ON THE SOCIAL STRUCTURE AFTER A BOMBING DISASTER

P-674 Aug. 18, 1955

Discusses various elements in predicting the social and political consequences of a large-scale bombing attack. Examines the effects of a bombing upon the organization of society, the distribution of political and economic power, and the institutions relevant to the effective functioning of ociety. 30 pp. Published in World Politics, Jan. 1956.

Hirshleifer, J. with

FEATHER RIVER WATER FOR SOUTHERN CALIFORNIA

P-1034

J. C. DeHaven

For abstract, see same title under Dellaven.

Feb. 20, 1957

Hirshleifer, J.

AN ISOQUANT APPROACH TO INVESTMENT DE-CISION PROBLEMS

P-1158 Aug. 23, 1957

Attempts to solve, through the use of isoquant analysis, the problem of optimal investment decisions. The principles stated in Irving Fisher's The Theory of Interest are reviewed in connection with the rules of behavior currently proposed by economists to guide business-investment decisions. Concludes that (1) the Present-value Rule for investment decisions is correct, but in a limited sense, and (2) the Internal-rateof return Rule for the multi-period case is not generally correct if the usual definition of the internal rate is adopted. 45 pp. Illus. Published under the title "On the Theory of Optimal Investment Decision" in The Journal of Political

Economy, Aug. 1958.

## Title & Abstract

# Publication No. and Date

Hirshleifer, J.

DOES EFFICIENT PEAK-LOAD PRICING INVOLVE DISCRIMINATION?

P-1169 Oct. 9, 1957

A commentary on P. O. Steiner's article, "Peak Loads and Efficient Pricing." Agrees with Steiner's solution of the problem of peak-load efficient pricing, but disagrees with his statement that the solution involves discriminatory prices. 12 pp. Illus. Published under the title "Peak Load and Efficient Pricing: Comment" in The Quarterly Journal of Economics, Aug. 1958.

Hirshleifer, J.

WATER SUPPLY FOR SOUTHERN CALIFORNIA: RATIONALIZATION OR EXPANSION?

P-2057 Aug. 12, 1960

An attempt to determine whether the benefits from the Feather River Project justify the incremental cost of extending the aqueduct system to the Southern Calif. Coastal Plain and Coastal San Diego Co. Service Area. 24 pp. Tables. Published in the <u>Proceedings of the 31st Conference of the Western Economic Association</u>, 1960.

Hirshleifer, J.

RISK, THE DISCOUNT RATE, AND INVESTMENT DECISIONS

P-2143 Nov. 21, 1960

Presents a simple market theory of risk, modelled on Fisher's treatment of time-preference and interest. Shows how the criterion of maximizing present value must be modified or generalized when risky investments are considered. 14 pp. Illus. Presented before the American Economic Association at St. Louis, Mo., Dec. 28-30, 1960, and published in the Proceedings of that association, May 1961.

## Title & Abstract

Publication No.

Hirshleifer, J.

WATER SUPPLY: ECONOMICS, TECHNOLOGY AND POLICY

Book, 1960

J. DeHaven & J. Milliman

University of Chicago Press, Chicago, Ill., 378 pp. Illus. \$7.50.

Contrasts two techniques as methods of meeting water demands—improvement in allocation of existing water supplies and development of additional supplies. Two case studies of crucial water decisions, the Cannonville Project in N.Y. and the Feather River Project in Calif., point up the authors' views on technical, economic, and legal aspects of water-supply decisions.

Hirshleifer, J.

AN EXPOSITION OF THE EQUILIBRIUM OF THE FIRM: SYMMETRY OF THE PRODUCT AND FACTOR ANALYSES

P-2410 Sept. 1961

A discourse on an imperfect symmetry in the standard textbook presentation of the equilibrium of the firm. Attempts to provide a more correct treatment of both product and factor units for the equilibrium of the firm and indicates a rather significant ambiguity in the usual concept of marginal cost. 9 pp. Published in Economica, Aug. 1962.

Hirshleifer, J.

THE FIRM'S COST FUNCTION: A SUCCESSFUL RECONSTRUCTION?

P-2448 Sept. 1961

An evaluation of a reconstruction of the firm's cost function proposed by Armen Alchian in P-1449, Costs and Outputs. The relevance of this reconstruction is examined for a variety of different situations. The study also shows how the reconstruction can be reconciled with the orthodox model. 46 pp. Illus. Published in The Journal of Business, Feb. 1962.

# Title & Abstract

# Publication No.

## Hitch, C. J.

#### PLANNING DEFENSE PRODUCTION

P-105 Sept. 29, 1949

A talk on the production problems of an advanced defense economy. Considers the method in which the defense budget is allocated among the production of the various goods and services contributing to the nation's security. 12 pp. Published in the Proceedings of the American Economic Association, May 1950. Presented before the American Economic Association, in New York City, Dec. 27, 1949.

#### Hitch, C. J.

#### SUBOPTIMIZATION IN OPERATIONS PROBLEMS

P-326

Nov. 18, 1952

An analysis of the possibilities, limitations, and dangers of suboptimizing. The utility of certain concepts and postulates of economic theory for improving the selection of criteria in operations research problems is examined. 24 pp. Illus. Published in Operations Research for Management, ed. by J. F. McCloskey and F. N. Trefethen, The Johns Hopkins Press, Baltimore, 1954, \$7.50; and in the Journal of the Operations Research Society of America, May 1953. Presented before the National Bureau of Standards at Washington, D.C., Nov. 17-18, 1952. (See Supplement, P-386, under McKean.)

#### Hitch, C. J.

### AN APPRECIATION OF SYSTEMS ANALYSIS

P-699 Aug. 18, 1955

A description of military systems analysis as a framework for combining the knowledge of experts in many fields to reach solutions which transcend any individual expert's judgment. 26 pp. Published in the Journal of the Operations Research Society of America, Nov. 1955. Presented before that Society Aug. 15, 1955 at Los Angeles, Calif.

#### Hitch, C. J.

## ECONOMICS AND MILITARY OPERATIONS RESEARCH

P-1250 Jan. 8, 1958

Examines some of the relations between operations research and economics. Suggests that an alliance between economics and military or governmental operations research may result in a new branch of endeavor, namely an economics of government expenditure.

25 pp. Published in The Review of Economics and Statistics, Aug. 1958.

### Title & Abstract

Publication No.

Hitch, C. J.

THE CHARACTER OF RESEARCH AND DEVELOPMENT IN A COMPETITIVE ECONOMY

P-1297 May 13, 1958

A discussion of how R&D can be used in our competitive economy to advance military technology. 13 pp. Presented before the National Science Foundation at Washington, D.C., May 20, 1958

Hitch, C. J.

FURTHER COMMENT ON ECONOMICS AND OPERATIONS RESEARCH

P-1758 July 22, 1959

A defense of the criterion used in the author's article "Economics and Military Operations Research" (P-1250), published in The Review of Economics and Statistics, Aug. 1949. 4 pp.

Hitch, C. J.

NATIONAL SECURITY POLICY AS A FIELD FOR ECONOMICS RESEARCH

P-1776 Aug. 19, 1959

A review of national security areas where economics research can contribute substantially to the solution of problems. The areas discussed are: analysis and measurement of economic strength for war; implications of large peacetime defense budgets; size of the defense budget; efficiency in using and managing defense resources; institutional arrangements to promote efficiency; military R&D; military logistics; military alliance; economic warfare; mobilization; civil defense and recuperation; disarmament; and problems of access to data. 30 pp. Published in World Politics, April 1960.

Hitch, C. J. and R. N. McKean THE ECONOMICS OF DEFENSE IN THE NUCLEAR AGE Harvard University Press, Cambridge; Mass. 442 pp. Illus. \$9.50.

Book, 1960 & R-346 (AD 243098)
March 1960

Considers the economic problems of defense at three levels: the quantity of national resources available, now and in the future; the proportion of these resources allocated to national security purposes; and the efficiency with which the allocated resources are used by the defense departments. Considers the alternative policies existing at each level from which officials must choose.

#### Publication No. Author(s) and Date Title & Abstract Hitch, C. J. ON THE CHOICE OF OBJECTIVES IN SYSTEMS P-1955 STUDIES Mar. 30, 1960 A discourse on broadening our horizons and ambitions when objectives for systems studies are chosen. 13 pp. Presented before the Systems Symposium at Cleveland, Ohio, April 26-28, 1960, and published in the proceedings of the symposium. Hitch, C. J. UNCERTAINTIES IN OPERATIONS RESEARCH P-1959 April 25, 1960 A discussion of the uncertainties faced by operations researchers in determining a preferred strategy. The author is skeptical of general purpose solutions to the problems of making good decisions for uncertain contingencies. 13 pp. Presented before the Operations Research Society of America at New York, May 19-26, 1960. Hitch, C. J. THE USES OF ECONOMICS P-2179 Nov. 17, 1960 Address given at ceremonies dedicating the Center for Advanced Study of the Brookings Institution at Washington, D. C. Ways are discussed in which economics can be useful. Both the traditional and the less traditional areas in the realm of public policy are described to show the type of problems in which economics can be useful. 21 pp. WHAT CAN MANAGERIAL ECONOMICS CONTRIBUTE Hitch, C. J. P-2155 TO ECONOMIC THEORY? Dec. 1, 1960 and R. N. McKean

Examines the potential feedbacks from management economics to economic theory, indicated in the form of improvements in production functions. The business behavioral inputs to economic theory are discussed, together with how managerial economics may affect these inputs. Attempts to develop a theory of government behavior to supplement the theory of the firm. 14 pp. Presented before the American Economic Assn. at St. Louis, Mo., Dec. 28-30, 1960.

## Title & Abstract

Publication No. and Date

Hoag, M. W.

THE RELEVANCE OF COSTS IN OPERATIONS RESEARCH

P-820 April 13, 1956

Divides operations research into studies in which (1) costs are largely irrelevant, (2) a measure of real cost internal to the analysis is required, and (3) real costs must be approximated by money cost. 18 pp. Illus. Published in Operations Research, Aug. 1956. Presented before the Operations Research Society of America at Washington, D.C., May 10, 1956.

Hoag, M. W.

AN INTRODUCTION TO SYSTEMS ANALYSIS

RM-1678 (AD 101071) April 18, 1956

A speech on systems analysis delivered to an Air Force group visiting RAND. Systems analysis is defined as a systematic examination of a problem of choice in which each step of the analysis is made explicit wherever possible. The history of systems analysis and its application to military problems are discussed. 22 pp. Illus.

Hoag, M. W.

IS "DUAL" PREPAREDNESS MORE EXPENSIVE?

P-922 Aug. 14, 1956

A discourse on whether military dual preparedness (i.e., an ability to fight limited wars without a superbomb, as well as an ability to retaliate overwhelmingly with it) is more expensive than single preparedness. 9 pp. Published in the Bulletin of the Atomic Scientists, Feb. 1957.

Hoag, M. W.

WHAT IS A SYSTEM?

P-1035

Mar. 5, 1957

An attempt to define a "system" as a set of inter-related actions about which policy decisions are made. The difference between the administrator and analyst's approach in defining a system is discussed, and several examples are given to illustrate this variance. 6 pp. Published in Operations Research, June 1957.

Hoag, M. W.

ECONOMIC PROBLEMS OF ALLIANCE

P-1080

May 8, 1957

Considers how economic problems of alliance can be analyzed. Narrow tests of economic efficiency in military allocations are seen to be sharply restricted in applicability, while a broad formulation in terms of game (cont'd.)

### Title & Abstract

Publication No.

Hoag (cont'd.)

theory avoids these restrictions at the overriding cost of unworkability. The traditional treatment of civilian trade problems is suggested as a compromise. 37 pp. Condensed version published in The Journal of Political Economy, Dec. 1957.

Hoag, M. W.

### NATO DETERRENT VS. SHIELD

P-1103 June 13, 1957

A support of General Norstad's appeal to maintain sizable land forces in Europe that disagrees with his contention that such forces complement strategic airpower effectively in total war. 29 pp. Condensed version published in <a href="Foreign Affairs">Foreign Affairs</a>, Jan. 1958.

Hoag, M. W.

#### NATO DETERRENT VS. SHIELD

RM-1926 June 1957

for crong

A discussion of the argument within NATO for supplementing strategic air forces with strong tactical forces. Discusses advantages and disadvantages of total war and sharply limited war in Europe. 32 pp.

Hoag, M. W.

#### OPERATIONS RESEARCH: A NEW SCIENCE?

P-1030

July 1957

Discussion of operations research as a new science of decisionmaking. The role of analytic models in OR is considered, together with computational, criterion, and data problems. 10 pp. Published in The Journal of Business, July 1957. Presented before the Western Spectroscopy Assn., at Santa Monica, Calif., Jan. 24, 1957.

#### Hoag, M. W.

#### ECONOMICS OF A DUAL CAPABILITY

P-1195

Nov. 4, 1957

A discussion of a "dual capability," defined as a military capability to hit prospective enemies hard with either strategic air bombing or with land armies complemented by supporting air and naval units. 11 pp. Published in Ordnance, March-April 1958. Presented before the American Ordnance Assn., N.Y.C., Dec. 4, 1957.

#### Hoag, M. W.

#### ON NATO POOLING

P-1242-RC

Dec. 30, 1957

A review of two short books on NATO economics. The desirability of concentrating new efforts to pool resources in NATO upon the research and development area is appraised, and burdensharing problems are briefly analyzed. 13 pp. Published in World Politics, April, 1958.

## Title & Abstract

# Publication No. and Date

### Hoag, M. W.

THE PLACE OF LIMITED WAR IN NATO STRATEGY

P-1566 Dec. 4, 1958

A general consideration of the way in which limited war fits into NATO strategy. The official view that a limited-war capability is a by-product of other capabilities is criticized because the main products are questionable. Alternatives to a limited-war strategy and the issue of nuclear vs. primarily non-nuclear limited-war preparedness, are appraised. 48 pp. Presented before a Conference on NATO strategy at Princeton University, Princeton, N.J., Jan. 13-16, 1959. Published in NATO and American Security, Klaus Knorr (ed.), Princeton University Press, 1959.

#### Hoag, M. W.

SOME POLITICAL AND ECONOMIC ASPECTS OF OVERSEAS MISSILE BASES

P-1571 Dec. 8, 1958

A brief consideration of some questions that the State Dept. should put to military planners about intermediate-range ballistic missile installations in allied countries. 10 pp. Presented to the World Affairs Institute at Pasadena, Calif., Dec. 8, 1958.

#### Hoag, M. W.

SOME COMPLEXITIES IN MILITARY PLANNING

P-1531

Dec. 11, 1958

An application of economic theory to show some prevailing oversimplifications in military discussion. Requirements and priority approaches to military allocations are criticized, and the complications introduced by increasing and interdependent returns are illustrated. Some implications for defense doctrine and organization are presented.

36 pp. Published in World Politics, July 1959.

#### Hoag, M. W.

THE CONTENT OF ECONOMICS

P-1692

May 8, 1959

A brief sketch of economics for operations researchers. Its definition, scope, limitations, and potential contributions to operations research are discussed. 11 pp. Presented as part of a panel discussion to the Operations Research Society of America at Washington, D.C., May 15, 1959.

### Title & Abstract

# Publication No.

#### Hoag, M. W.

#### WHAT INTERDEPENDENCE FOR NATO?

P-1748 July 13, 1959

Discusses the desirable strategic division in labor in NATO, and argues the case for a radical division. By concentrating strategic airpower and its defense in America, and forgoing any renovation of European tactical capabilities for a strike-second nuclear case, economies are sought that will permit building a primarily nonnuclear capability in Europe backed by deterrent capabilities in America. 36 pp. Published in World Politics, April 1960, and in Survival May-June, 1960.

#### Hoag, M. W.

#### ON STABILITY IN DETERRENT RACES

P-2188 Jan. 10, 1961 Revised Jan. 1962 as P-2188-1

Discusses the fundamentals of deterrence and defense, including the implications of the arms race, using a hypothetical situation. 35 pp. Published in World Politics, July 1961. Revision published in The Revolution in World Politics, Morton Kaplan (ed.), John Wiley & Sons, New York, 1962.

#### Hoag, M. W.

#### ON LOCAL WAR DOCTRINE

P-2433 Aug. 1961

Examines doctrinal fundamentals that underlie various policy positions on limited war. The polar opposites of "Pure Massive Retaliation" and "Complete Graduated Deterrence" are contrasted and criticized, and the limiting process in local war is discussed. Differences among the official "New Look" of 1953, 1961, and (conjecturally) of 1965 are speculated about, and current open issues are listed. 26 pp. Illus. Presented before the Consultant Panel of the Operations Evaluation Group, Woods Hole, Mass., June 15, 1961.

## Title & Abstract

# Publication No.

Hoag, M. W.

MISSILES FOR FRANCE?

P-2594-1 June 21, 1962

A case against American aid to the French national nuclear strike force. The example such aid would set to others, the divisive impact within European NATO, and the incompatibility of national nuclear operations with an American city-sparing strategy are analyzed. Fuller nuclear partnership within NATO, possibly including a NATO deterrent force, is sketched as a desirable alternative to aid to national nuclear forces. 20 pp. Published as "Nuclear Policy and French Intransigence," Foreign Affairs, Jan. 1963.

#### tle & Abstract

# Publication No. and Date

Hoeffding, O.

THE NEW SOVET PLANS FOR AGRICULTURE AND CONSUMPTION

RM-1173 (ATI 210803) Dec. 13, 1953

A preliminary appraisal of recent Soviet measures to expand production and sales of consumer goods and to increase output and marketings in selected branches of agriculture. Deals particularly with the intended effects of these measures on consumption levels and prospects of their realization, their likely impact upon Russian resource allocation, and Soviet foreign policy and internal political conditions. 60 pp. Tables.

Hoeffding, O.

SOVIET NATIONAL INCOME AND PRODUCT IN 1928 Columbia University Press, New York. 160 pp. Tables. \$3.75. (A companion book to Bergson's Soviet National Income and Product, and Galenson's Labor Productivity in Soviet and American Industries.)

Closely examines the national income and product of the Soviet Union in 1928. The study of 1928 is important from the standpoint that the Soviet Union was as yet unaffected by the combined and cumulative effects of the Five-Year Plans and not until 1928 had the Soviet economy completed its phase of reconstruction. Also published as R-255 (AD 90414), Jan. 1954.

Hoeffding, O.

RECENT TRENDS IN SOVIET TRADE

An attempt to determine whether the USSR has shown recent evidence of genuinely greater trade-mindedness than it displayed under Stalin. Emphasizes Soviet trade with the West since 1953 and discusses salient developments in bloc trade. 30 pp. Also published as P-739, Sept. 15, 1955, 26 pp. and in The Annals of the American Academy of Political and Social Science, Jan. 1956.

1954

RM-1567 (AD 87819) Oct. 10, 1955

#### HO HO Publication No. Author(s) Title & Abstract and Date Hoeffding, O. SOVIET INDUSTRY FIVE YEARS AFTER STALIN P-1354 April 28, 1958 An appraisal of the current condition of Soviet industry with emphasis on (1) the tendency for the Soviet rate of growth of industrial output to decline in recent years and (2) the so-called "scrapping of the Sixth Five-Year Plan." 10 pp. Published in The New Leader, June 2, 1958. Hoeffding, O. THE CONDITION OF THE SOVIET ECONOMY RM-2202 (AD 156017) An analysis of the present state of the July 1, 1958 Soviet economy to determine what has happened that might warrant a major reappraisal of the present and future economic strength of the Soviet Union. Suggests that current Soviet economic problems are largely related to simultaneous pursuit of several major objectives, which all compete for resources and impose a certain strain on the economy. The economy appears to provide an adequate base for the military and political challenges offered by the USSR. 18 pp. Tables.

### Hoeffding, O. SOVIET STATE PLANNING AND FORCED INDUS-TRIALIZATION AS A MODEL FOR ASIA

P-1450 Aug. 5, 1958

An appraisal of the relevance and applicability to Asia's problems of Soviet experience in rapid industrialization under state planning. Discusses how Asian countries can profit from Soviet planning experience, and what alternatives are open to them. 30 pp.

# Hoeffding, O. ON THE PREVENTION OF SURPRISE ATTACK

T-95 Sept. 10, 1958

Translation of a Russian article by Maj. Gen. N. Talenskii which discusses the Soviet proposal to prevent surprise attack by one state against another. The proposal represents one part of a whole system of measures advanced by the Soviet government to alleviate international tension and end the armaments race. 7 pp.

### Title & Abstract

# Publication No. and Date

### Hoeffding, O.

THE SOVIET INDUSTRIAL REORGANIZATION OF 1957

P-1569 Dec. 12, 1958

A discussion of several aspects of the reorganization of industrial administration
and planning carried out in the Soviet
Union in 1957. Considers the 1957 reform
both a radical and conservative measure.
23 pp. Published in <u>The American Economic</u>
Review, May 1959. Presented before the
American Economic Assn. at Chicago, Ill.,
Dec. 27, 1958.

### Hoeffding, 0.

### THE SOVIET SEVEN YEAR PLAN

P-1607 Feb. 2, 1959

Discusses the new Soviet Seven Year Plan for 1959-1965 and Krushchev's prediction that in 15 years the USSR will "take first place in the world." The feasibility of Soviet industrial and agricultural goals is examined with the rate at which industrial progress is providing Soviet political strategy with the material means for progressing toward the outcome postulated by Marxism-Leninism. 19 pp. Published in Foreign Affairs, April 1959.

# Hoeffding, 0.

A. E. Nimitz

SOVIET NATIONAL INCOME AND PRODUCT, 1949-1955

RM-2101 (AD 213477) April 6, 1959

Part of a broader investigation to determine real changes in the size and structure of Soviet gross national income and product from 1949-1955. Gives 1949-1955 estimates calculated in current rubles and at established prices. The data cover a period of sudden and substantial changes in price levels as well as in the relative price

structure. 247 pp. Tables.

Hoeffding, O.

P-2493

Dec. 1961

#### Publication No. Author(s) Title & Abstract and Date RECENT EFFORTS TOWARD COORDINATED ECO-Hoeffding, O. P-1768 NOMIC PLANNING IN THE SOVIET BLOC Aug. 7, 1959 A review of the ten-year history of the Soviet Bloc's Council of Economic Mutual Aid (CEMA). Describes the first two phases of CEMA (1949-1953 and 1954-1957) as unimpressive. In CEMA's third phase, the prospect of Soviet primary products will enable Eastern Europe to start correcting some of the distortions inherited from earlier years, but a spectacular economic growth should not be expected as a result. 24 pp. Hoeffding, O. SOVIET NATIONAL INCOME AND PRODUCT. RM-2544 with 1928-1948: REVISED DATA (AD 253000) A. Bergson & For abstract, see same title under Nov. 15, 1960 H. Heymann, Jr. Bergson. Hoeffding, 0. SINO-SOVIET ECONOMIC RELATIONS IN RECENT P-2087 YEARS Dec. 15, 1960 Discusses the Soviet contribution to China's economic development. Aspects examined are: the history of China's association with the Soviet effort to promote economic integration in the bloc; bilateral trade relations with the Soviets; China's debtor status with the USSR; and the highly fluctuating course of Sino-Soviet trade from 1957-1959. 27 pp. Tables. Presented before the Third International Sovietological Conference at Tokyo, Japan, Sept. 19-24, 1960 and published in its papers. Also published in Ost Europa, May 1961.

A discourse on the 22nd Congress which is described as a congress preoccupied with reshaping the past and denouncing the failings, errors, and crimes of the Party's past leaders. Examines the agenda of the congress and its outline of the size and structure of the Soviet economy between 1970 and 1980. 12 pp. Presented before the Brookings Institution Seminar on the 22nd Communist Party Congress, at Washington, D. C., Dec. 1, 1961.

THE 22nd CONGRESS OF THE CPSU: SOME

DOMESTIC IMPLICATIONS

Author(s)	Title & Abstract	Publication No. and Date
Heffenberg, M. with N. M. Kaplan	APPROACHES TO SOVIET INTER-INDUSTRY RELATIONSHIPS For abstract, see same title under Kaplan.	RM-1202 (AD 114131) Mar. 2, 1954
Hoffenberg, M. with K. J. Arrow, et al.	A TIME SERIES ANALYSIS OF INTERINDUSTRY DEMANDS For abstract, see same title under Arrow.	1959

### Title & Abstract

### Publication No. and Date

Hoffman, F. S.

COMMENTS ON THE MODIFIED FORM OF AIRCRAFT PROGRESS FUNCTION

RM-464 Oct. 4, 1950

An examination of the aircraft progress curve (introduced by the Stanford Research Institute) to determine whether this modification shows a clear superiority over the original and simpler form of the curve in terms of the fit of the curves to the observed data. 15 pp.

Hoffman, F. S.

THE ECONOMIC ANALYSIS OF DEFENSE: CHOICE WITHOUT MARKETS

P-1582 Dec. 19, 1958

The application of some of the more general concepts and propositions of economic theory to military decisionmaking, with particular attention to the allocation of scarce resources for research among competing uses. 18 pp. Published in The American Economic Review, May 1959. Presented before the American Economic Association at Chicago, Ill., Dec. 27, 1958, and published in the proceedings of the Association.

Hsia, R.

GOVERNMENT ACQUISITION OF AGRICULTURAL OUTPUT IN MAINLAND CHINA, 1953-1956

RM-2207 (AD 211940) Sept. 3, 1958

An estimate of government acquisitions of agricultural products based on data from tax collections and government purchases. After allowing for relief payments in kind and government sales to the agricultural sector, net government acquisitions are found to have risen from 9.6 billion yuan in 1953 to 12.4 billion yuan in 1955, and declined to 10.4 billion yuan in 1956. 102 pp. Tables.

Isard, W. with

REGIONAL SCIENCE TECHNIQUES APPLICABLE TO REGIONAL PLANNING For abstract, see same title under Moore. P-1099 June 4, 1957

F. T. Moore

### Abstract & Title

Publication No. and Date

Johnson, D. G.

A STUDY OF THE GROWTH POTENTIAL OF AGRICULTURE OF THE USSR

RM-1561 (AD 87817) Oct. 3, 1955

An investigation of the difficulties in expanding Soviet agricultural output, the possibilities for increasing the available supply of agricultural products, and the input savings and labor uses in USSR agriculture. 72 pp. Tables.

Johnson, D. G. and Arcadius Kahan THE SOVIET AGRICULTURAL PROGRAM: AN EVALUATION OF THE 1965 GOALS

RM-2848-PR (AD 275785) May 1962

Evaluates the feasibility of the Soviet Seven Year Plan goals for 11 basic agricultural commodities. The planned increase in aggregate output of these commodities between 1958 and 1965 is 62 per cent when outputs are valued at 1958 procurement prices. Over four-fifths of the planned increase is accounted for by feed and livestock products. Estimates that industrial crop goals can probably be met if they receive top priority, that the estimated increase in feed might permit an increase in livestock output of 36 per cent (far below plan), and that, assuming normal weather, aggregate output of the 11 commodities might increase by 24 per cent. 119 pages. Tables.

Johnson, L. L.

THE THEORY OF HEDGING AND SPECULATION IN COMMODITY FUTURES

P-1308 March 6, 1959

Outlines the mechanics and purposes of a commodity-futures market, discusses and appraises the theory of hedging and speculation, presents a reformulated concept of hedging, and constructs a model that may both assist in clarifying the concepts of hedging and speculation and contribute to a better understanding of certain market phenomena. 31 pp. Illus. Presented before the Econometric Society at Chicago, Ill., Dec. 27, 1958.

Author(s)	Title & Abstract	Publication No and Date
Kaplan, N. M. and J. H. Blackman, H. Heymann, Jr. A. D. Redding & N. W. Rodin	A TENTATIVE INPUT-OUTPUT TABLE FOR THE USSR, 1941  , A preliminary input-output table for the USSR, which is consistent with the 1941 plan structure of the Soviet economy. Detailed sources and methods are presented in a series of appendices. 153 pp. Illus	RM-924 (ATI 210756) Sept. 2, 1952
Kaplan, N. M.	ARITHMANCY, THEOMANCY, AND THE SOVIET ECONOMY	P-332 Mar. 6, 1953
	A review and critique of the Jasny estimate of real Soviet national product and its allocations. 36 pp. Illus. Published in The Journal of Political Economy, April 1953.	
Kaplan, N. M. and M. Hoffenberg	APPROACHES TO SOVIET INTER-INDUSTRY RELATIONSHIPS	RM-1202 (AD 114131)
	Uses the U.S. 1947 matrix of input-output coefficients to generate USSR final demands (or gross outputs) from USSR gross outputs (or final demands). 30 pp. Tables.	March 2, 1954
Kaplan, N. M. and W. L. White	A COMPARISON OF 1950 WHOLESALE PRICES IN SOVIET AND AMERICAN INDUSTRY	RM-1443 (AD 91181)
	An investigation of the data, sources, and methods required to compile price ratios for approximately 2,000 commodities produced in the U.S. and USSR. This comparison of ruble-dollar wholesale prices may serve as an aid in obtaining information on the Soviet economy and on international price index numbers. 356 pp. Illus.	May 1, 1955
Kaplan, N. M. and E. S. Wainstein		(AD 100024)
	A summary of previous work on the retail prices of food and manufactured goods. Shows that in 1950 the retail purchasing power of the ruble was on the order of 5 or 6 cents, and that the real wage in the Soviet Union was 12 to 16 per cent of the real wage in the U.S. 41 pp. Illus. Also published as P-901, Oct. 3, 1956 and in The Journal of Political Economy, Dec. 1956.	0ct. 3, 1956

### Title & Abstract

# Publication No. and Date

#### Kaplan, N. M.

COLLECTIVE FARM INVESTMENT IN THE USSR

RM-1733 (AD 111505) June 12, 1956

One of a series of studies concerned with Soviet capital formation from 1923/24 to date. The present study discusses basic collective farm investment in the USSR, the Agricultural Bank loans and bank-financed investment, and some estimates of collective farm investment for specific years. 55 pp. Tables.

Kaplan, N. M. and E. S. Wainstein AN ADDENDUM TO PREVIOUS USSR-U.S. RETAIL PRICE COMPARISONS

RM-1906 (AD 123547) May 13, 1957

A supplement to RM-1692-1 The authors have recomputed the average ruble-dollar price ratios with new weights recently published in a Soviet statistical handbook. They have found that the previous results in connection with all commodities and services were not appreciably affected. 3 pp. Tables. Published in The Journal of Political Economy, Dec. 1957 under the title "A Note on Ruble-Dollar Comparisons."

Kaplan, N. M.

A COMPARISON OF CONSTRUCTION COSTS IN THE USSR AND U.S.

RM-1986 (AD 133033) Sept. 23, 1957

A description of and commentary on a comparative study, made by the Stanford Research Institute, which attempts to obtain ruble-dollar price ratios for construction. The ratios are surprisingly low, and reasons are given why they are probably too low. 85 pp.

Kaplan, N. M.

COMMENTS ON WILES' RATIONALITY, THE MARKET, P-1398
DECENTRALIZATION, AND THE TERRITORIAL July 7, 1958
PRINCIPLE

A discussion of the theory of the rational allocation of resources and of the meaning of rationality. Enumerates possible conflicts between a rational allocation and economic growth. Some problems of proper incentives, tests of performance, and criteria for investment choice are stated. 10 pp. Presented before the Symposium on Economic Calculation and Organization in Eastern Europe, University of California at Berkeley, June 16, 1958.

### Title & Abstract

# Publication No.

### Kao, R. C.

NOTE ON PROGRAM UNCERTAINTY IN DYNAMIC INVENTORY PROBLEM

P-2376 July 19, 1961

A study of the dynamic inventory problem for a follow-on provisioning in which the program length is subject to uncertainty with a known distribution. Shows that under general cost conditions, the optimal policy is of the (S,s) type. This is true whether or not there exists a time lag in delivery provided that excess demand is always backlogged. The case of infinite program horizon is also briefly discussed. 10 pp. Published in Econometrica, April 1962.

### Kao, R. C.

### LINEAR PROGRAMMING

P-2514 Jan. 1962

Discusses the role of linear programming in solving the optimal diet problem, the theory of linear systems, theories relating to the computational aspect of linear programming, and some applications. 14 pp. Presented before the Mathematics Symposia for 1961-62 at Pasadena, Calif., Jan. 9, 1962.

#### Kao, R. C.

#### AGGREGATION OF MAGNITUDE JUDGMENTS

P-2463-1 Feb. 1962

An examination of the problem of aggregation of magnitude judgments by a group of individuals of the same set of stimuli. Necessary and sufficient conditions for the existence and the uniqueness of minimumvariance solutions are given for both ratio and interval scales. Discusses the computations needed for obtaining these solutions. 31 pp.

#### Kao, R. C.

USE OF COMPUTERS IN THE PROCESSING AND ANALYSIS OF GEOGRAPHIC INFORMATION

P-2593 (AD 605965) Aug. 1962

A survey of past and current quantitative research in geography and the use of high-speed computers. Classifies geographic problems and their relation to data reduction, data processing and special problems in computer technology. Discusses potential uses of computers in disciplines for which geographic data are essential and the role of the universal mapping system. Presented before the Conference on Cartography and Geodesy, National Academy of Sciences-National Research Council, in Washington, D.C. May 12, 1962. Published in The Geographic Review, Nov., 4, 1963.

Author(s)	Title & Abstract	Publication No.
Kaplan, A. with A. Skogstad & M. A. Girshick	THE PREDICTION OF SOCIAL AND TECHNOLOGICAL EVENTS For abstract, see same title under Skogstad.	P-93 April 1, 1949
Kaplan, N. M.	THE LAW OF VALUE AND SOVIET ECONOMIC PLANNING  A critical review of the comment in The American Economic Review (1944-1945) on a Soviet press release which asserted that, contrary to the views previously held in	RM-488 (ATI 210347) Nov. 11, 1950
Kaplan, N. M.	the Soviet Union, the law of value operates in socialist economics. 30 pp.  THE CHOICE AMONG INVESTMENT ALTERNATIVES	P-177
	An examination of proposals made by Soviet economists on investment choice. Stresses the possibility of wide disagreement over the future course of Soviet economic policy in view of the lack of unanimity, the absence of official resolution, and the nature of the prosals. 22 pp. Published in The Journal of Political Economy, April 1952. Presented before the Econometric Society at Chicago, Ill. Dec. 27, 1950.	0-
Kaplan, N. M.	THE CHOICE AMONG INVESTMENT ALTERNATIVES IN SOVIET THEORY  A revision of P-177. Examines the fundamental agreement of Soviet economists on a criterion for choice among investment alternatives, given the rate of investment. Also evaluates the fundamental agreement of the group with the "bourgeois" concept of the rate of interest. 95 pp.	RM-539 (ATI 210680) Feb. 8, 1951
Kaplan, N. M.	CAPITAL INVESTMENTS IN THE SOVIET UNION, 1924-1951  The first of several studies on Soviet capital formation. Considers the conceptual and organizational aspects of Soviet capital formation which are prerequisite for interpreting Soviet data, together with basic data on annual investments. 218 pp. Illus.	RM-735 (ATI 210431) Nov. 28, 1951

#### Abstract & Title

Publication No. and Date

Johnson, L. L.

COMMUNICATIONS SATELLITES AND TELEPHONE RATES: PROBLEMS OF GOVERNMENT REGULATION

RM-2845-NASA Oct. 1961

Part of a continuing study of the economic and policy implications of communications satellites being conducted at RAND for NASA. This Memorandum attempts to determine how savings in the cost of using satellites will be passed on to the consumer of communications services. Analyzes the relationship between telephone costs and rates under government regulation, and suggests changes in regulation that would contribute to a more direct relationship. 125 pp. Illus.

Johnson, L. L. and H. Averch BEHAVIOR OF THE FIRM SUBJECT TO EXTERNAL REGULATORY CONSTRAINT

P-2488-1 March 1962

Develops a theory of the monopoly firm seeking to maximize profit but which is subject to a constraint on its rate of return. Applies the analysis to the telephone industry to contribute to understanding market behavior. 25 pp. Illus. Published in the <u>American Economic Review</u>, Dec. 1962.

Johnson, L. L.

THE COMMERCIAL USES OF COMMUNICATION SATELLITES

P-2601 (AD 604801) June 1962

An abstract of RM-2845-NASA. Concludes that to maximize the effectiveness of our aid to underdeveloped countries, uses and costs of communications must be weighed against expenditures of technical assistance funds and foreign aid loans. 29 pp. Tables. Published in California Management Review, March 1963.

Johnson, L. L.

ECONOMIC PROBLEMS OF ESTABLISHING A COMMUNICATIONS SATELLITE SYSTEM

P-2647 Oct · 1962

Suggests that a combination of satellite and conventional communications links appears to be superior, from a cost standpoint, to a system containing a large number of ground stations. 9 pp. Testimony given before the Subcommittee on Monopoly of the Senate Select Committee on Small Business, Aug. 3, 1961.

Author(s)	Title & Abstract	Publication No.
Kaplan, A. with A. Skogstad & M. A. Girshick	THE PREDICTION OF SOCIAL AND TECHNOLOGICAL EVENTS For abstract, see same title under Skogstad.	P-93 April 1, 1949
Kaplan, N. M.	THE LAW OF VALUE AND SOVIET ECONOMIC PLANNING	RM-488 (ATI 210347) Nov. 11, 1950
	A critical review of the comment in The American Economic Review (1944-1945) on a Soviet press release which asserted that, contrary to the views previously held in the Soviet Union, the law of value operates in socialist economics. 30 pp.	11, 1990
Kaplan, N. M.	THE CHOICE AMONG INVESTMENT ALTERNATIVES IN SOVIET ECONOMIC THEORY	P-177 Dec. 14, 1950
	An examination of proposals made by Soviet economists on investment choice. Stresses the possibility of wide disagreement over the future course of Soviet economic policy in view of the lack of unanimity, the absence of official resolution, and the nature of the prosals. 22 pp. Published in The Journal of Political Economy, April 1952. Presented before the Econometric Society at Chicago, Ill. Dec. 27, 1950.	· ·o-
Kaplan, N. M.	THE CHOICE AMONG INVESTMENT ALTERNATIVES IN SOVIET THEORY  A revision of P-177. Examines the fundamental agreement of Soviet economists on a criterion for choice among investment alternatives, given the rate of investment. Also evaluates the fundamental agreement of the group with the "bourgeois" concept of the rate of interest. 95 pp.	RM-539 (ATI 210680) Feb. 8, 1951
Kaplan, N. M.	CAPITAL INVESTMENTS IN THE SOVIET UNION, 1924-1951	RM-735 (ATI 210431) Nov. 28, 1951
	The first of several studies on Soviet capital formation. Considers the conceptual and organizational aspects of Soviet capital formation which are prerequisite for interpreting Soviet data, together with basic data on annual investments. 218 pp. Illus.	20, 1//1

Author(s)	Title & Abstract	Publication No.
Jones, W. M. and	THE FLIGHT OPERATIONS PLANNER	RM-2415 (AD 227738)
M. B. Shapiro & N. Z. Shapiro	A study that examines the problems involved in planning the operations of large numbers of high-performance aircraft and describes the role of the Flight Operations Planner (FLIOP). This is a digital computer program designed to reduce the amount of time and effort necessary in calculating detailed flight plans for individual aircraft. Techniques described can be applied to any fixed wing-type aircraft. 98 pp. Illus.	July 16, 1959
Jones, W. M. and M. B. Shapiro	THE FLIGHT OPERATIONS PLANNER, ADDENDUM TO RM-2415	RM-2525 (AD 237155)
	Since the earlier study, additional features have been incorporated into the digital computer program. They provide information about course and distance from a known point allow the user to designate enroute points, and change the method of determining winds so that the results are a more accurate approximation of the effect of the aircraft's motion on the standard vector deviation quantities used. Discusses certain technical operations of the routine of the IBM 704.	,
Kahan, Arcadius with D. G. Johnson	EVALUATION OF THE 1965 GOALS	RM-2848-PR (AD 275785) May 1962
Kain, J. F. and J. H. Niedercorn	CHANGES IN THE LOCATION OF FOOD AND GENERAL MERCHANDISE STORE EMPLOYMENT WITHIN METROPOLITAN AREAS, 1948-1958 For abstract, see same title under Niedercorn.	P-2614-1 Aug. 15, 1962
Kain, J. F. and J. H. Niedercorn	DEVELOPMENT	P-2663 (AD 292170) Dec. 1962

### Title & Abstract

Publication No. and Date

Kaplan, N. M.

SOME METHODOLOGICAL NOTES ON THE DEFLATION OF CONSTRUCTION

P-1243 May 15, 1959

A description of and commentary on some of the procedures used in the measurement of changes in the value of construction at constant prices. Proposes a redefinition of construction output and two alternative approaches to its measurement at constant prices. 36 pp. Tables. Published in the Journal of the American Statistical Association, Sept. 1959.

Kaplan, N. M. and

AN INDEX OF SOVIET INDUSTRIAL OUTPUT

P-1848 Mar. 2, 1960

R. Moorsteen

Summarizes the results of a calculation of an index of Soviet industrial output (see RM-2495, below), and gives some comments on and application of these results. Part I presents the index of Soviet industrial output and discusses its nature and limitations. Part II considers the index in comparison with others, some dynamic aspects of Soviet industrial growth, indicated future rates of growth, an index of the output of final products, and estimated changes in productivity. 44 pp. Tables. Published in The American Economic Review, June 1960.

Kaplan, N. M. and R. Moorsteen INDEXES OF SOVIET INDUSTRIAL OUTPUT, VOLS. I AND II

RM-2495 (AD 241134) May 13, 1960

Gives indexes of Soviet industrial output for the period from 1927/28 to 1958. Various applications and implications of the indexes are considered: (1) comparisons with indexes computed by other students of the Soviet economy and with official indexes; (2) determination of major trends in Soviet rates of growth; (3) measurements of industrial productivity changes. 305 pp. Tables. (Summarized in P-1848. See above.)

### Title & Abstract

# Publication No. and Date

Kaplan, N. M.

THE STOCK OF SOVIET CAPITAL ON JANUARY 1, 1961

P-2248-1 Oct. 1961

A discussion of the Russian inventory and revaluation of capital (i.e., of buildings, structures, producers' durables, and other fixed assets in place), undertaken by the Russians in the last four months of 1959. This paper attempts to describe the revaluation procedures, to present and comment on the primary results, the 1960 capital values, and to draw some implications from the results--primarily some intertemporal and international comparisons of the distribution of capital. 110 pp. Tables. Presented before the Conference on Economics of Soviet Industrialization at Princeton, N.J., May 6-8, 1961.

### Title & Abstract

# Publication No. and Date

Klein, B. H. and W. H. Meckling APPLICATION OF OPERATIONS RESEARCH TO DE-VELOPMENT DECISIONS

P-1054 March 3, 1958

Discusses the difference between an efficient allocation of the development budget and the efficient conduct of a current operation. The problem is essentially not one of choosing among specific end-product alternatives, but of choosing a course as development proceeds. 18 pp. Published in Operations Research, May-June 1958. Presented before the Operations Research Society of America at Pittsburgh, Pa., Nov. 15, 1957.

Klein, B. H.

WHAT'S WRONG WITH MILITARY R&D?

P-1267 March 7, 1958

Suggests more effective use of present and future resources committed to research and development. This can be done by decontrolling R&D to get varieties of ideas to ensure rapid advances in military technology and to develop a wide range of military capabilities to obtain military security. 26 pp. Published in Fortune, May 1958.

Klein, B. H.

MILITARY RESEARCH AND DEVELOPMENT POLICIES

R-333 (AD 226128) Dec. 4, 1958

W. H. Meckling & E.G. Mesthene

A study on military R&D to discover effective policies in providing military services with new weapons. Investigates development histories of many postwar fighters and bombers, most of the postwar engines, and all of the postwar bombing-navigation systems. Discusses the general nature of military R&D, the shortcomings of some present development policies, and an approach to weapon-system development. 32 pp.

Klein, B. H.

THE DECISION-MAKING PROBLEM IN DEVELOPMENT

P-1916 Feb. 19, 1960

Indicates the aspects in which the decision-making problem in development is different from that in making production decisions. Conclusions of this paper are similar to Schumpeter's idea that the conditions required for an efficient allocation of existing resources and those for rapid economic progress are not the same. 30 pp. Illus. Presented at the Conference on Economic & Social Factors Determining the Rate & Direction of Inventive Activity, Univ. of Minnesota, May 12-14, 1960.

#### Title & Abstract

Publication No. and Date

Klein, B. H. and

THE NATURE AND FUNCTION OF MILITARY R&D

P-2147 Nov. 4, 1960

E. G. Mesthene

W. H. Meckling & A description of research and development for the military. The need for many kinds of knowledge is indicated, along with the sequential character of research and development. Includes five rules of good development policy. 6 pp.

Klein, B. H. and

COMMUNICATIONS SATELLITES AND PUBLIC POLICY: AN INTRODUCTORY REPORT

RM-2925-NASA (AD 275936)

Dec. 1961

J. M. Goldsen

L. S. Lipson

W. H. Meckling

F. T. Moore &

S. H. Reiger

Outlines the problems of public policy raised by the development of satellite communication techniques. Surveys satellite technology as

of mid-1960; analyzes outstanding technical problems; estimates the probable cost of some of the more promising systems; analyzes future demand for overseas tele-communications under likely cost conditions and use possibilities. Also points out areas of federal responsibility, both international and domestic, including the problem of frequency allocation. Sections I and II were also issued as a separate report, RM-2709-NASA (see entry under Meckling) and it was later supplemented by RM-2778-NASA (also by Meckling). The latter publication may therefore be regarded as a supplement to

Klein, B. H.

POLICY ISSUES INVOLVED IN THE CONDUCT OF MILITARY DEVELOPMENT PROGRAMS

the present RM. 146 pp. Illus.

P-2648 (AD 292652) Oct. 1962

Discusses some issues involved in the conduct of military R&D. Attempts to determine why weapon systems undergo pronounced changes during development and when it can be determined if the product is going to work and how much it will really cost. Discusses the implications of these problems for R&D policies. 29 pp. Presented before the Conference on Economics of Research and Development, Columbus, Ohio, Oct. 15-17, 1962.

### Title & Abstract

# Publication No.

### Kershaw, J. A.

### RECENT TRENDS IN THE SOVIET ECONOMY

P-737 Sept. 8, 1955

A study of recent Soviet economic trends and their influence on USSR rates of growth. Discusses the rates in effect before Stalin's death and the influence of the post-Stalin changes, together with future economic developments. 25 pp. Illus. Published in The Annals of the American Academy of Political and Social Science, Jan. 1956.

# Kershaw, J. A.

### SYSTEMS ANALYSIS AND EDUCATION

RM-2473 Oct. 30, 1959

R. N. McKean

A study for the Ford Foundation to assess the possibilities of making quantitative comparisons of elementary and secondary educational systems to help administrators and others choose improved education systems. Indicates that more work needs to be done toward estimating the "inputoutput relationships" in education. 70 pp. Tables.

# Kershaw, J. A. and

R. N. McKean

# DECISIONMAKING IN THE SCHOOLS: AN OUTSIDER'S VIEW

P-1886

Jan. 10, 1960

An attempt to present a framework that will help school board members and administrators to cope with many decisions. A numerical example is presented that illustrates an approach to decisionmaking and that shows how more nearly scientific comparisons of school policies can be made. 14 pp. Table.

Published in School Management, May 1960.

#### Kershaw, J. A.

# DIRECTIONS FOR FUTURE GROWTH OF THE SOVIET ECONOMY

P-2201 Jan. 23, 1961

Describes the consistent and high rate of growth of the Soviet economy since 1929 in an attempt to determine its future general trend. The problems of the agricultural sector of the Soviet economy are compared to the success of the industrial sector. The impact of competition from other sectors of the economy on the rate of growth is discussed. 20 pp. Presented before the University of Indiana Conference on the Study of the Soviet Economy at Bloomington, Ind., Feb. 3-4, 1961.

Author(s)	Title & Abstract	Publication No and Date
Kershaw, J. A. with R. N. McKean	WHAT TO DO ABOUT TEACHER SHORTAGES  For abstract, see same title under McKean.	P-2458-1 Sept. 1962
Kershaw, J. A. and R. N. McKean	TEACHER SHORTAGES AND SALARY SCHEDULES McGraw-Hill Book Company, Inc., New York 203 pp. Illus. Paperback \$2.95; hard cover \$5.50.	Book, 1962 & RM-3009-FF Dec. 1961
	Reports on a survey of teacher shortages in the public secondary schools and provides an economic analysis of teacher compensation practices. Shortages are found to be in certain subject-matter skills for which salaries in other professions are becoming higher. Concludes that across-the-board increases in teacher salaries, if large enough to be effective, would impose unacceptable tax burdens, would lead to uneconomic use of resources, and would do little or nothing to readjust the balance of subject-matter specialties among teachers in training. What is needed is a teacher salary schedule which provides suitable subject-matter pay differentials.	
Kessel, R. A. with A. A. Alchian	THE MEANING AND VALIDITY OF INFLATION-INDUCED BUSINESS PROFITS RESULTING FROM A LAG OF WAGES BEHIND PRICES For abstract, see same title under Alchian.	P-1488 Nov. 6, 1958

R. N. McKean

#### Publication No. Author(s) Title & Abstract and Date Karcz, J. F. SOVIET AGRICULTURAL MARKETINGS AND PRICES, RM-1930 1928-1954 (AD 133013) July 2, 1957 Part of a broader investigation to obtain price index numbers for deflating national income accounts in terms of current rubles. Attempts to show index numbers of Soviet agricultural prices from 1928 to 1954. Compares prices recieved by the farmer with what he must pay for retail goods and services, and suggests that, relative to the city worker, the peasant is as well off now as he was in 1928. 513 pp. Tables. Kaysen, C. NOTE ON SOME HISTORIC PRINCIPLES OF TARGET RM-189 SELECTION July 1949 A summarization of target-selection criteria developed by the USAF. These principles are based on (1) military importance, (2) percentage of direct military use, (3) depth, (4) economic vulnerability, (5) physical vulnerability, and (6) location and size of targets. 10 pp. Kaysen, C. THE VULNERABILITY OF THE UNITED STATES TO P-438 ENEMY ATTACK: ELEMENTS OF AN UNCLASSIFIED Oct. 4, 1953 RESEARCH PROGRAM IN THE SOCIAL SCIENCES Research on the characteristics of the U.S. as a present and future target. Discusses the available methods for estimating the effects of attacks in economic, political, and broad social terms, and the measures and costs to reduce these effects. 23 pp. Published in World Politics, Jan. 1954. Kaysen, C. WHAT THE FACTORY WORKER KNOWS ABOUT HIS P-1275 with FACTORY Feb. 2, 1958 D. R. Fagg & For abstract, see same title under Fagg.

Author(s)	Title & Abstract	Publication No and Date
Kershaw, J. A.	PRODUCTIVITY AND WELFARE IN SOVIET AGRICULTURE	P-109 Nov. 3, 1949
	An examination of the Jasny theses on Soviet agriculture that (1) labor productivity increased only slightly between 1928-1938 and (2) the welfare of farmer and urbanite was not higher in the later period. While essentially true, these are found to have possible misleading implications for prediction of future industrial output. 13 pp. Published in The American Economic Review, March 1950.	
Kershaw, J. A.	THE ECONOMICS OF SOVIET AGRICULTURE	RM-336
	An evaluation of the Soviet agricultural program. Discusses: organization of agricultural production; results of collectivization; farm labor productivity; basic conditions of Soviet agricultural development; and effects of war on agriculture. 37 pp.	(ATI 210628) Feb. 6, 1950
Kershaw, J. A. with J. Hirshleifer	THE ECONOMIC WAR POTENTIAL OF THE UNITED STATES AND THE SOVIET UNION  For abstract, see same title under Hirshleifer.	RM-367 (ATI 210373) Apr. 17, 1950
Kershaw, J. A.	THE ECONOMIC WAR POTENTIAL OF THE USSR	P-182 Dec. 6, 1950
	Presents the problems of methodology and concept of economic war potential of the Soviet Union. Considers some of the definitional and conceptual problems in general and three rough measures of the Soviet potential compared with that of the U.S. 12 pp. Published in the Papers and Proceedings of the American Economic Review, May 1951. Presented before the American Economic Association at Chicago, Dec. 1950.	200. 0, 2770
Kershaw, J. A.	SOVIET AGRICULTURAL PROSPECTS	P-278
	Speculates on the way the relevant magnitude of economic effort are likely to interact an attempts to describe a probable economic structure of Soviet agriculture in 1970. 22 Presented before a meeting at Arden House, Harriman, N.Y., May 23-25, 1952. Published Soviet Economic Growth, A. Bergson (ed.), Ro Peterson & Co., Evanston, Ill., 1953. \$6.00	d pp. in w,

### Title & Abstract

Publication No. and Date

### Koopmans, T. C.

EFFICIENCY ASPECTS OF DISPERSAL OF POPULATION AND INDUSTRY

P-215 June 5, 1951

An analysis of the efficiency aspects of dispersal, defined as a factor which diminishes the damage that can be inflicted by an enemy through a given application of resources to his attack. 14 pp. Presented before a Logistics Conference at RAND, July 7, 1951.

# Koopmans, T. C. (ed.)

ACTIVITY ANALYSIS OF PRODUCTION AND ALLO-CATION, Cowles Foundation Monograph No. 13, John Wiley & Sons, New York, 404 pp. \$5.50.

1951

Proceedings of a conference devoted to various aspects of a fundamental problem of normative economics—the best allocation of limited means toward desired ends. Contains 25 papers by different authors. Major divisions are: the theory of programming and allocation; applications of allocation models; mathematical properties of convex sets; and problems of computation.

### Koopmans, T. C.

ACTIVITY ANALYSIS AND ITS APPLICATIONS

P-352

Dec. 10, 1952

An expository paper on activity analysis and its applications. 14 pp. Presented before a joint meeting of the American Economic Association and the Econometric Society at Chicago, Ill., Dec. 28, 1952. Published in Papers and Proceedings of the American Economic Association, May 1953.

# Koopmans, T. C. with M. Beckmann, et al.

THE ALLOCATION OF SWITCHING WORK IN A SYSTEM OF CLASSIFICATION YARDS
For abstract, see same title under

P-448

Dec. 5, 1953

Laitin, Howard

SOME EFFECTS OF RADIATION ON MAN

Beckmann.

P-2523 (AD 606660)

A review of certain aspects of radiation and Nov. 1961 its effects on man. Discusses such topics as (1) effects of radiation at the cellular level, (2) somatic effects resulting from injury at the biochemical and cellular level, and (3) recovery and long-term effects. 18 pp. Presented before various military reserve groups in the Los Angeles area, Nov.-Dec., 1961.

with

B. H. Klein, et al.

(AD 275936)

#### Publication No. Author(s) and Date Title & Abstract RM-1342 Leibenstein, H. PROPOSAL FOR THE DEVELOPMENT OF A THEORY OF ECONOMIC GROWTH FOR A SOVIET-TYPE (AD 86025) ECONOMY Sept. 15, 1954 Outlines the general structure of a theory of Soviet economic growth, factors, variables, and relationships considered, and the role and meaning of the interest rate for resources allocation under different dictatorial objective functions. 61 pp. P-808 Leibenstein, H. ECONOMIC DEVELOPMENT AND THE RATE OF Feb. 28, 1956 INTEREST UNDER DICTATORIAL CONDITIONS Investigates the importance of the interest rate in determining resource allocation under conditions of economic growth and dictatorially determined economic decisions (i.e., those made other than on the basis of consumers' sovereignty). Discusses these issues under both the aggrandizing and benevolent dictator. Formerly a part of RM-1342 (above). 27 pp. BARGAINING: THE HIDDEN HAND IN GOVERNMENT RM-1434 Lindblom, C. E. Feb. 22, 1955 An analysis of bargaining in government as a preferable method of decision-making which results in the public interest. Also discusses the distinction between bargaining and hierarchy in government. 46 pp. Lindblom, C. E. ECONOMIC DEVELOPMENT, RESEARCH AND DE-P-1982 with VELOPMENT, POLICYMAKING: SOME CONVERGING May 4, 1960 A. O. Hirschman VIEWS For abstract, see same title under Hirschman. COMMUNICATIONS SATELLITES AND PUBLIC RM-2925-NASA Lipson, L. S.

POLICY: AN INTRODUCTORY REPORT

For abstract, see same title under Klein. Dec. 1961

# Title & Abstract

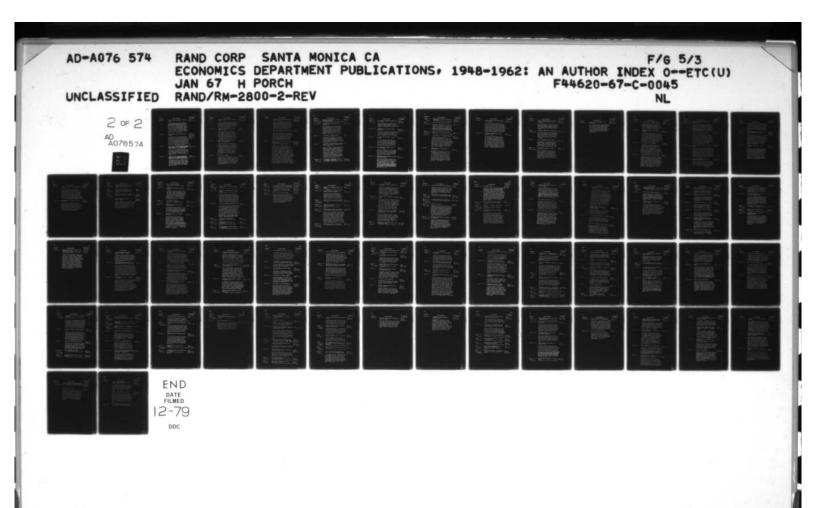
Publication No.
and Date

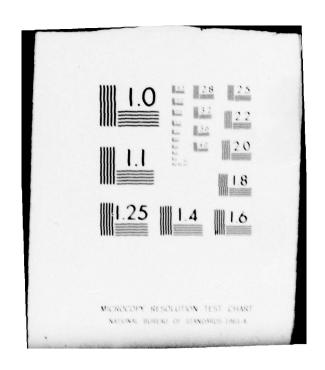
Liu, T. C.

STRUCTURAL CHANGES IN THE ECONOMY OF THE CHINESE MAINLAND, 1933 to 1952-1957

P-1590 Jan. 12, 1959

An economic analysis of the changes in China from 1933 to 1957. Discusses problems which lead up to establishing the communes in 1958. 15 pp. Tables. Presented to the American Economic Association at Chicago, Ill., Dec. 27, 1958 and published in the proceedings of the Association. Also published in the American Economic Review, May 1959.





Author(s)	Title & Abstract	Publication No.
Lubell, H.	ISRAEL'S NATIONAL EXPENDITURE: SUMMARY OF RESULTS	P-1170 Sept. 9, 1957
	A summary chapter for a report entitled Israel's National Expenditure, 1950-1954 (Published by the Falk Project for Economic Research, Jerusalem, Israel, 1958, \$2.00). The national expenditure figures presented show the development of the level of national welfare and the allocation of national resources. A summary breakdown of Israel's expenditures on gross national product is given, in current and constant (1952) prices. 48 pp. Tables.	
Lubell, H.	MIDDLE EAST CRISES AND WORLD PETROLEUM MOVEMENTS	RM-2185 (AD 156018) May 26, 1958
	A discussion of the major interruptions in the supply of oil from the Middle EastIran in 1951 and Suez in 1956. Surveys the effects of these crises on world petroleum production and shipping, examines the impact of a hypothetical future interruption of the flow of Middle Eastern oil to the western world. 51 pp. Illus. (P-1421, 33 pp. Tables. Published in Middle Eastern Affairs, Nov. 195	Revised as P-1421 July 8, 1958
Lubell, H.	REVIEW OF OEEC, SOME ASPECTS OF THE EUROPEAN ENERGY PROBLEM, AND OEEC, EUROPE'S GROWING NEEDS OF ENERGY: HOW CAN THEY BE MET?	P-1445 July 28, 1958
	A review of two documents showing the basic contributions of the Organization for European Economic Cooperation to the discussions of Western Europe's growing shortage of energy resources that preceded the birth of Euratom. 5 pp.	
Lubell, H.	A REVIEW OF OEEC, OIL: THE OUTLOOK FOR EUROPE, AND OEEC, EUROPE'S NEED FOR OIL: IMPLICATIONS AND LESSONS OF THE SUEZ CRISIS	P-1461 Aug. 15, 1958
	A review of the last two reports of the Oil Committee of the OEEC. These publications constitute the best available summary of Western European views on the oil situation and reflect Europe's growing awareness of the extent of its stake in Middle East oil. 5 pp.	

Author(s)	Title & Abstract	Publication No.
Lubell, H.	A REVIEW OF ENERGY FORECASTS IN WESTERN EUROPE	P-1466 Aug. 21, 1958
	A review of several reports concerning projecting European energy requirements and regional deficits two decades into the future. Reports are closely related by authorship, basic statistics, and methodology. 6 pp. Published in Econometrica, Jan. 1960.	
Lubell, H.	THE PUBLIC AND PRIVATE SECTORS AND IN- VESTMENT IN ISRAEL	P-2176 Jan. 5, 1961
	A description of Israel's economy "as private enterprise financed out of the public budget." Discusses: the three major ownership groups in the country; output and investment by public and private sectors; public financing of investment; and foreign aid and the financing of investment. 19 pp. Tables. Published in Middle Eastern Affairs, April 1961.	
Lubell, H.	ENERGY POLICY AND SECURITY OF ENERGY SUPPLY IN WESTERN EUROPE	P-2209 Feb. 1, 1961
	Discusses the shift in Western European energy policy from coal to overseas oil. Gives economic and political arguments for and against this change. The main criticisms of the experts' views are that the cost argument is overplayed, that freedom of consumer choice is really only a catchword, and that the security aspect is underplayed. 56 pp. Tables. Condensed version (formerly issued as P-1998, May 20, 1960) published in World Politics, April 1961.	
Lubell, H.	THE SOVIET OIL OFFENSIVE	P-2360 June 26, 1961
	Discusses the future prospects for increased Soviet oil exports. Examples are cited in examining the aims and techniques of the USSR in penetrating non-Soviet oil markets. Considers the implications for the West of the Soviet oil export drive. 34 pp. Published in the Quarterly Review of Economics and Business, Nov. 1961.	

### Title & Abstract

# Publication No. and Date

Lubell, H.

THE SOVIET OIL OFFENSIVE AND INTER-BLOC ECONOMIC COMPETITION

RM-2812-PR (AD 269106) Dec. 1961

Analyzes the available data on Soviet oil production and exports, and relates these data to the broader East-West economic struggle. Assesses the effects of Soviet oil exports on the West as both consumer and producer of oil. Measures are discussed for reducing the risk of a less reliable oil supply. 93 pp. Tables.

Lubell, H.

A NOTE ON THE NATIONAL ACCOUNTS OF ALGERIA, 1950-1959 and 1964

P-2524 Jan. 1962

Tables showing the figures on most of the national accounts flows for Algeria for 1950 through 1959 and for 1964. The tables present the gross national product account, the personal income account, the government revenue and current outlay account, the combined capital account, and the balance of payments account. 12 pp.

Lubell, H.

MIDDLE EAST OIL CRISES AND WESTERN EUROPE'S ENERGY SUPPLIES
The Johns Hopkins Press, Baltimore,

Maryland. 233 pp. Illus. \$8.75

Book, 1963 & RM-2766-PR (AD 296927) April 1962

Analyzes Western Europe's dependence on Middle East oil. Considers a range of possible oil crises and examines various measures by which Europe could insure itself against them. Detailed projections of oil consumption, production, and capacity to 1968 are included. Examines Western Hemisphere supplies as an alternative to Middle East oil in the event of serious stoppages. Concludes that such capacity could be expanded sufficiently to meet Europe's needs, but points out the need for maintaining surplus tanker capacity beyond 1968. Also examines the cost to Europe of providing a cushion of indigenous supplies to insure against the loss of Middle East oil and make itself less dependent on Western Hemisphere oil. This decision lies with the governments of Western Europe, but it could have world-wide economic and political consequences. (RM-2766-PR, 363 pp. Illus.)

		Publication No.
Author(s)	Title & Abstract	and Date
MacClintock, S. with E. G. Mesthene	THE NATURE OF RESEARCH GOALS: SOME NECESSARY DEFINITIONS For abstract, see same title under Mesthene	RM-2858-PR (AD 272828) .Jan. 1962
Mah, Feng-hwa	THE FINANCING OF PUBLIC INVESTMENT IN COMMUNIST CHINA	P-2031 June 30, 1960
	An inquiry into the state capital investment in Communist China during the first Five-Year Plan (1953-1957). Discusses the extraction of funds to maintain a high investment level through a forced industrialization program. Much of the domestic financing has been accomplished by the transfer of financial resources out of the agricultural sector. 53 pp. Tables.	
Manne, A. S.	Describes a joint attempt of the Union Oil Co. and RAND to study a gasoline blending problem. Applies mathematical economics to an actual industrial situation. 2 pp. Presented before the Western Computer Conference at Los Angeles, Feb. 12, 1954.	P-479 Jan. 25, 1954
Manne, A. S.	SCHEDULING OF PETROLEUM REFINERY OPERATIONS Harvard University Press, Cambridge, Mass. 185 pp. Tables. \$5.00.	1956
	Written for both the economist and petroleum engineer. Reports on several examples of the actual use of mathematical economics in representative oil refinery scheduling problems. Includes a review of conventional refinery cost accounting methods, a problem involving the allocation of crude oils to refineries at different locations, and a discussion of refinery methods and processes. (Eight chapters also published as Papers: P-383, April 23, 1953, and P-481, 484, 487, 489, 493, 502, and 503, May 1, 1954.)	
Markowitz, H. M. with G. H. Fisher	ON PREDICTING A COMBINATION OF OUTPUTS AND FINAL DEMANDS BY INPUT-OUTPUT For abstract, see same title under Fisher.	RM-954 (ATI 210479) Oct. 3, 1952

Author(s)	Title & Abstract	Publication No.
Markowitz, H. M. and R. N. Snow	THE PROBLEM OF DEFINING AND MEASURING RAIL-ROAD CAPACITY  An evaluation of railroad capacities in an attempt to determine what traffic can be handled in certain situations. In particula the Trans-Siberian railroad is studied. 16	(ATI 210765) Sept. 1952
Markowitz, H. M.	PROCESS ANALYSIS OF THE METAL-WORKING INDUSTRIES  Analyzes major areas such as metal working, fuel, power, and chemicals to formalize a moof each sector and the interrelations of sectors. Determines a production function	
Markowitz, H. M.	for the economy as a whole. 26 pp. Tables.  THE NATURE AND APPLICATIONS OF PROCESS ANALYSIS  A study to determine what combinations of civilian and military outputs may be produced with specified national resources.  Discusses a process analysis model and its uses. 23 pp. Tables. Presented before the International Seminar on Input-Output Relations at Pisa, Italy, July 5, 1954.	P-547 May 24, 1954
Markowitz, H. M.	THE GEOGRAPHIC DISTRIBUTION OF METAL-WORKING EQUIPMENT  Data on the distribution of metal-working machinery by industry, type, and geographical location. Indicates that the quantity of various machines outside metropolitan areas is sufficient for substantial military output. 12 pp. Tables.	RM-1263 (AD 85482) June 10, 1954
Markowitz, H. M.	INDUSTRY-WIDE, MULTI-INDUSTRY, AND ECONOMY-WIDE PROCESS ANALYSIS  Defines process analysis, presents an example of a subanalysis, describes the difficulties of, and the aids to, the building of an economy-wide model, and compares economy-wide models. 25 pp. Tables.  Published in The Structural Interdependence of the Economy, Proceedings of an International Conference on Input-Output Analysis, Tibor Barna (ed.), John Wiley & Sons, Inc., New York, 1956. \$7.50.	P-600 Nov. 18, 1954

Author(s)	Title & Abstract	Publication No.
Markowitz, H. M. with A. J. Rowe	AN ANALYSIS OF MACHINE TOOL SUBSTITUTION POSSIBILITIES For abstract, see same title under Rowe.	RM-1512 (AD 87449) June 30, 1955
Marschak, J.	NOTES ON THE OPTIMAL CHOICE OF WEAPONS	P-470 Nov. 30, 1951
M.R. Mickey, Jr.	Determines a weapon system that, subject to a given cost constraint, will maximize the mathematical expectations of the military utility. 36 pp. Illus. Published in the Minutes of the Third Annual Logistics Conference, March 1952. Presented before that conference at Washington, D.C., Jan. 3, 1952.	
Marschak, T. A. with	AN ACTIVITY ANALYSIS APPROACH TO LOCATION THEORY	P-649 April 5, 1955
M. Beckmann	For abstract, see same title under Beckmann	•
Marschak, T. A.	A SPATIAL MODEL OF U.S. PETROLEUM REFINING	RM-2205 (AD 156038)
	An addition of spatial dimension to a linear-programming model of U.S. petroleum refining constructed by A. S. Manne. Refining technology in each of four U.S. region is described by a 39-row matrix obtained from Manne's 105-row matrix by aggregation procedur. Other rows and columns of the spatial-model matrix deal with shipment of commodities between regions by pipeline, tanker, barge, and tank-car and with transport within each region. 125 pp. Illus.	res.
Marschak, T. A.	CENTRALIZATION AND DECENTRALIZATION IN ORGANIZATIONS	P-1587 Jan. 7, 1959
	An attempt to clarify the issues involved among schemes for sharing the task of decisionmaking in a firm. The study is concerned with schemes that are analogs of the decentralized "solution" of socialist economics, of the centralized solution, or of solutions that are neither centralized nor decentralized. A model of the organization and of the schemes used is discussed to help determine which class of system is preferable. 52 pp. Tables.	

## Title & Abstract

Publication No. and Date

#### Marschak, T. A.

THEORY AND POLICY IN THE FRENCH NATIONALIZED INDUSTRIES

P-1871 Jan. 15, 1960

A survey showing the impact of French economic theorists on public policy in France. Considers the studies performed by members of, or at the request of, the French electric and gas companies, coal mines, and railways. The specific problem areas discussed deal with the choice of investment projects for fixed-capital budgets, the pricing of outputs, inventory decisions, and the relations between the nationalized industries. 43 pp. Illus.

### Marschak, T. A.

STRATEGY AND ORGANIZATION IN A SYSTEM-DEVELOPMENT PROJECT

P-1901 Feb. 3, 1960

Shows the use of case studies of system-development projects to determine development strategies. Illustrates types of project organization associated with both successful and unsuccessful system development. The case study presented, known as the TH system, is a microwave relay system for the transmission of telephone conversations and television signals. 57 pp. Illus. Presented before the Conference on Economic and Social Factors Determining the Rate and Direction of Inventive Activity, held at the University of Minnesota, May 12-14, 1960.

#### Publication No. Author(s) Title & Abstract and Date Marshall, A. W. A NOTE ON THE POWER FUNCTION OF THE WALD-RM-271 WOLFOWITZ TOLERANCE LIMITS FOR A NORMAL (ATI 174368) DISTRIBUTION Oct. 21, 1949 An investigation of the power function of the Wald-Wolfowitz method. Constructs tolerance limits for a normal distribution and determines a method which approximates an integral with limits of integration that are random variables. 6 pp. Marshall, A. W. THE SUPPLY OF FEMALE LABOR IN WORLD WAR II P-420 and Feb. 5, 1954 J. Hirshleifer Analyzes the influence of various determinates on the female labor force during World War II, and attempts to discover whether the supply curve of female labor was backwardsloping. Auto-correlated error terms are considered in a multiple-regression model. 29 pp. Illus. Marshall, A. W. A NOTE ON RANDOMIZED BRANCH SAMPLING P-725 Aug. 26, 1955 A discussion of the operation of randomized branch sampling, the relation between this sampling plan and importance sampling developed in Monte Carlo calculations, and some improvements to Jessen's theory based upon the identity of these methods. 6 pp. Marshall, A. W. PREDICTABILITY OF THE COSTS, TIME, AND P-1821 and SUCCESS OF DEVELOPMENT Dec. 11, 1959 W. H. Meckling Results of some recent research into the extent and nature of the uncertainty in new developments, with emphasis on problems of development in the Air Force.

24 pp. Tables. Presented before the Conference on the Economic and Social Factors Determining the Rate and Direction of Inventive Activity, University of Minnesota,

May 12-14, 1960.

## Title & Abstract

Publication No. and Date

Marshall, S. M.

A REVIEW OF THE STEEL INDUSTRY OF THE UNITED STATES

RM-1091 (ATI 210461) April 21, 1953

Shows detailed construction requirements per ton of annual ingot capacity in integrated steel plants. For each component of a mill, cost estimates are determined in terms of materials, man-hours, and 1953 dollars. Assumes that existing steel-mill equipment is reproduced and that no new capacity is optimally added under current conditions. 80 pp. Tables.

### Title & Abstract

Publication No.

#### Massell, B. F. SOME OBSERVATIONS ON CAPITAL LONGEVITY

P-2103 Sept. 19, 1960

Contains remarks on the relationship between the longevity of a capital asset and the annual services provided by the asset, and an empirical observation on the nature of the change in capital longevity in the U.S. economy. 10 pp. Tables.

## Massell, B. F. ANOTHER SMALL PROBLEM IN THE ANALYSIS OF GROWTH

P-2194
Jan. 13, 1961

Discusses the evidence that the observed increase in the average productivity of labor has been primarily a consequence of technical progress, as contrasted with capital deepening. Indicates another procedural difficulty involved in the apportionment of productivity increase between technical progress and capital deepening and presents a partial solution to the problem. 9 pp. Published in The Review of Economics and Statistics, Aug. 1962.

#### Massell, B. F. IS INVESTMENT REALLY UNIMPORTANT?

P-2088-2 June 1, 1961

A theoretical and empirical re-examination of the hypothesis that the contribution of investment to increases in output per manhour is minimal, as suggested by earlier studies. Using time series and cross-section data, evidence is provided of the interrelationship of investment and technical change. This suggests that the role of investment is larger than previously indicated. 37 pp. Published in Metroeconomica, April-Aug.-Dec. 1962.

### Massell, B. F. A DISAGGREGATED VIEW OF TECHNICAL CHANGE

P-2090-2 June 9, 1961

An attempt to measure the relative importance of "intraindustry" and "interindustry" technical change. The latter, which results from factors of production shifting among industries, leads to a discrepancy between the aggregate rate of technical change and a weighted sum of industrial rates. Nearly one-third of aggregate technical change is accounted for by interindustry change, mostly a result of capital mobility. 24 pp. Tables. Published in the Journal of Political Economy, Dec. 1961

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#### Title & Abstract

Publication No.

Massell, B. F. and

R. R. Nelson

RESEARCH AND ECONOMIC GROWTH--THE ROLE OF PUBLIC POLICY

P-2089-3 Aug. 10, 1961

Examines the relationship of scientific research, technical progress, and economic growth, and the opportunities and problems of public policy consequent upon this relationship. 15 pp. Published in <u>California Management Review</u>, Winter 1962, and in <u>The Goal of Economic Growth</u>, E. S. Phelps (ed.), W. W. Norton and Company Inc., New York, 1962.

Massell, B. F.

INVESTMENT, INNOVATION, AND GROWTH

P-2149-1 Oct . 1961

Examines the evidence that the major part of the increase in average labor productivity in the U.S. over the past 40 years has resulted from technical progress. Considers the relationship between investment and technical progress in the context of a simplified model, and attempts to reassess the contribution of investment to economic growth. 23 pp. Illus. Presented before the Econometric Society Meeting at St. Louis, Mo., Dec. 28-30, 1960. Published in Econometrica, April 1962.

Massell, B. F.

POSTATTACK DAMAGE ASSESSMENT: A CONCEPTUAL ANALYSIS

RM-2844-PR Nov. 1961

S. G. Winter, Jr.

Provides a framework for discussion and analysis of systems designed to provide information concerning a thermonuclear attack and its impact upon the U.S. economy. Analyzes the objectives of a damage assessment system in terms of information provided by the system. Emphasizes the possibility that the enemy may intentionally target the system and that preattack research on the information problems is of utmost importance to assure that the information system is both fast and flexible. 56 pp.

Massell, B. F.

DETERMINANTS OF PRODUCTIVITY CHANGE IN UNITED STATES MANUFACTURING

P-2510 Jan. 1962

Discusses the forces underlying a trend which shows a significant rise in output per manhour in all major segments of the U.S. economy in the past 40 years. Capital deepening and technology advance are suggested as the two

(continued)

#### Title & Abstract

Publication No. and Date

Massell (cont'd.)

agents responsible for productivity change, and estimates of their relative significance are presented. Draws the distinction between autonomous and induced shifts in the production function, and gauges their relative importance in the manufacturing sector. 69 pp. Tables. Published in Yale Economic Essays, Fall 1962.

Massell, B. F. with C. Wolf, Jr. ECONOMIC DEVELOPMENT AND POSTWAR RECUPERA-TION: A COMPARISON OF INDUSTRIAL PRIORITIES RM-2952-PR (AD 270637) Jan. 1962 and P-2274-1 April 1962

Compares industrial priorities for economic development in underdeveloped areas and for recuperation from thermonuclear war in developed countries. A theoretical discussion precedes a presentation of the similarity of industrial priorities in the two contexts. Discusses some possible implications of these results for U.S. policy. 34 pp. Tables. Published in The Journal of Industrial Economics, April 1963.

Massell, B. F.

ECONOMETRIC VARIATIONS ON A THEME BY SCHNEIDER

P-2582 (AD 606416) May 1962

An analysis, using elementary econometric techniques, of data presented in a paper by Harold K. Schneider in Economics in East African Aboriginal Societies, at the SSRC Conference, Northwestern University, Nov. 1961. Supplements Schneider's observation on the relationship among the variables by a more formal treatment that involves fitting a production function to cross-section data, using multiple regression analysis. 11 pp. Published in Economic Development and Cultural Change, Oct. 1963.

#### Title & Abstract

Publication No. and Date

## Massell, B. F.

TRADE BETWEEN EAST AFRICA AND NEIGHBORING COUNTRIES

P-2652 Sept. 1962

Attempts to determine the prospects of expanding trade between the territories of East Africa and other countries in the Eastern part of the continent by examining their existing patterns of trade. Countries considered are Kenya, Uganda, Tanganyika, Congo, Ethiopia, Federation of Rhodesia and Nyasaland, Mauritius, Ruanda-Urundi, Somalia, Sudan, and Zanzibar. 18 pp. Tables. Published in the Economic and Statistical Review, East African Statistical Department, Sept. 1962.

#### Massell, B. F.

INDUSTRIALIZATION AND ECONOMIC UNION IN EAST AFRICA

P-2643 (AD 606410) Nov. 1962

A study of the contribution that economic union can make to industrialization in Greater East Africa. Argues for industrialization in underdeveloped areas in general and in Greater East Africa in particular. 23 pp. Table. Presented before the Economics Club of Nairobi, Kenya, Nov. 1, 1962. Published in the East African Economics Review, Dec. 1962.

Author(s)	Abstract & Title	Publication No and Date
McGuire, C. B. with M. Beckmann	THE DETERMINATION OF TRAFFIC IN A ROAD NETWORK: AN ECONOMIC APPROACH For abstract, see same title under Beckmann.	P-437 Oct. 6, 1953
McGuire, C. B. with M. Beckmann et al.	THE ALLOCATION OF SWITCHING WORK IN A SYSTEM OF CLASSIFICATION YARDS For abstract, see same title under Beckmann.	P-448 Dec. 5, 1953
McGuire, C. B. with M. Beckmann & C. B. Winsten	STUDIES IN THE ECONOMICS OF TRANSPORTATION For abstract, see same title under Beckmann.	RM-1488 (AD 90419) May 12, 1955
McGuire, C. B.	STEAM LOCOMOTIVE AVAILABILITY AND TERMINAL FACILITIES	RM-1592 (AD 87885) Nov. 28, 1955
	A study to determine the daily availability of steam locomotives by examining the light maintenance and servicing work done in engine	1011 20, 1999

terminals, the locomotive time consumed in such work, and the equipment and labor required. This discussion may be of use in economic vulnerability and logistical inter-

diction studies. 30 pp. Illus.

Author(s)	Title & Abstract	Publication No.
McKean, R. N. with G. Cooper	ARE WE SURE ABOUT DISPERSAL?  For abstract, see same title under Cooper.	P-301 May 19, 1952
McKean, R. N.	SUBOPTIMIZATION CRITERIA AND OPERATIONS RESEARCH	P-386 April 22, 1953
	An extended study of P-326 by C. J. Hitch. Discusses: criteria prerequisite to suboptimizations that lead to improved operations within a given institutional framework; institutional changes devised for increasing efficiency; and descriptive or consumers' research useful to high-level suboptimization. 20 pp. Presented at The Johns Hopkins University, Baltimore, Md., April 22, 1953.	
McKean, R. N. with G. Cooper	IS DISPERSAL GOOD DEFENSE? For abstract, see same title under Cooper.	P-548 Sept. 15, 1954
McKean, R. N.	CRITERIA FOR THE SELECTION OF WATER-RESOURCE PROJECTS	P-689 Sept. 16, 1955
	A discussion of certain problems of a cost- benefit analysis of water-resource projects. 15 pp. Illus. Published in the <u>Journal of</u> the <u>Operations Research Society of America</u> , Feb. 1956. Presented before that Society at Los Angeles, Calif., Aug. 16, 1955.	
McKean, R. N.	CRITERIA OF EFFICIENCY IN GOVERNMENT EXPENDITURES	P-1180 Sept. 18, 1957
	Discusses criteria problems involved in choosing efficient government programs. Explains the inevitability of breaking problems into administratively manageable subproblems and the consequent danger of applying inconsistent criteria. 12 pp. Illus. Published in the Federal Expenditure Policy for Economic Growth and Stability, Jo Economic Committee, 85th Congress, 1st Session. U.S. Government Printing Office, Washington, D.C., Nov. 5, 1957. \$3.25. Presented to the Subcommittee on Fiscal Policy, Joint Economic Committee, U.S. Congress.	int on.

Author(s)	Title & Abstract	Publication No.
McKean, R. N. with D. R. Fagg & C. Kaysen	WHAT THE FACTORY WORKER KNOWS ABOUT HIS FACTORY For abstract, see same title under Fagg.	P-1275 Feb. 2, 1958
McKean, R. N.	ANALYSIS John Wiley & Sons, N.Y., 336 pp. \$8.00.  An inquiry into the analysis of water-resources investments and civil government operations. Discusses the limitations and use of quantitative analysis and illustrates how it can be used extensively in choosing budget size and composition. Advances the discussion of handling time streams of costs of gains and presents revised methods and exhibits for comparing water-resource project	1958
McKean, R. N.	A discussion of the defense budget and defense activities to evaluate alternative expenditures for governmental operations. Discusses the costs and gains of various programs, gives breakdowns of cost and indicators of performance in recent budgets and improvements of these performance indicators.  24 pp. Presented at the Universities-Nations Bureau of Economic Research Conference at Charlottesville, Va., April 10-11, 1959, and published in its proceedings: Public Finance: Needs, Sources, and Utilization, Princeton University Press, 1961.	3
McKean, R. N. with J. A. Kershaw	SYSTEMS ANALYSIS AND EDUCATION For abstract, see same title under Kershaw.	RM-2473 Oct. 30, 1959
McKean, R. N. with J. A. Kershaw	DECISIONMAKING IN THE SCHOOLS: AN OUTSIDER'S VIEW  For abstract, see same title under Kershaw.	P-1886 Jan. 10, 1960
McKean, R. N. with C. J. Hitch	WHAT CAN MANAGERIAL ECONOMICS CONTRIBUTE TO ECONOMIC THEORY? For abstract, see same title under Hitch.	P-2155 Dec. 1, 1960

Author(s	)	Title & Abstract	Publication No.
McKean, with		THE ECONOMICS OF DEFENSE IN THE NUCLEAR AGE Harvard University Press, Cambridge, Mass.	Book 1960, & R-346 (AD 243098)
C. J.	Hitch	For abstract, see same title under Hitch.	March 1960
McKean, with	R. A.	TEACHER SHORTAGES AND SALARY SCHEDULES For abstract, see same title under	Book, 1962 & RM-3009-FF
J. A.	Kershaw	Kershaw.	Dec. 1961
McKean, and	R. N.	WHAT TO DO ABOUT TEACHER SHORTAGES	P-2458-1 Sept. 1962
J. A.	Kershaw	Summarizes the analysis and conclusions of RM-3009-FF (above). Argues that school districts should adopt a new kind of salary schedule that allows them to raise salaries for relatively scarce teaching skills without being compelled to pay higher salaries for all teaching skills. 15 pp. Tables. Published in Saturday Review, Education Supplement, Nov. 17, 1962.	

Auther(s)	Title & Abstract	Publications No.
Meekling, W. H. with B. H. Klein	APPLICATION OF OPERATIONS RESEARCH TO DE- CISIONS For abstract, see same title under Klein.	P-1054 Mar. 3, 1958
Meckling, W. H.	SINGLE OWNERSHIP OF A SUPERIOR RESOURCE: THE ROAD CASE AGAIN RE-EXAMINED	P-1516 Oct. 15, 1958
	A discussion of (1) the implications of various institutional arrangements for efficiency of road use and (2) whether centralized ownership of a commonly used resource, such as the superior road, will result in efficient use. 18 pp. Illus.	
Meckling, W. H. with B. H. Klein & E. G. Mesthene	MILITARY RESEARCH AND DEVELOPMENT POLICIES For abstract, see same title under Klein.	R-333 (AD 226128) Dec. 4, 1958
Meckling, W. H. with A. W. Marshall	PREDICTABILITY OF THE COSTS, TIME, AND SUCCESS OF DEVELOPMENT  For abstract, see same title under Marshall.	P-1821 Dec. 11, 1959
Meckling, W. H. and S. H. Reiger	COMMUNICATIONS SATELLITES: AN INTRODUCTORY SURVEY OF TECHNOLOGY AND ECONOMIC PROMISE	RM-2709-NASA Sept. 15, 1960
	A discussion of the ability of communications satellite systems to provide broad-band, long distance communications at microwave frequencies without depending on intermediate ground relay stations. Various alternative systems are identified: passive systems, low-orbit active systems, and 24-hour systems. A communications satellite system would greatly increase the number of long-distance channels available and the cost per channel is therefore tied critically to the question of future demand for additional channels. 57 pp. Illustrations	g- 1- 3
Meckling, W. H. with B. H. Klein & E. G. Mesthene	THE NATURE AND FUNCTION OF MILITARY R&D For abstract, see same title under Klein.	P-2147 Nov. 4, 1960

Author	(s)
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### Title & Abstract

Publication No.

Meckling, W. H.

THE ECONOMIC POTENTIAL OF COMMUNICATION SATELLITES

P-2216 Mar. 1, 1961

A discussion of communication satellites as a means of substantially reducing cost as compared to the new submarine cables, provided high rates of use can be achieved. Lower toll rates would lead to a substantial expansion of use and new kinds of demand are an important factor but their potential is difficult to evaluate. 26 pp. Illus. Published in Science, June 1961.

Meckling, W. H. and S. H. Reiger

ECONOMIC ASPECTS OF COMMUNICATION SATELLITE SYSTEMS

P-2396 June 3, 1961

Analyzes the problem of cost and utilization in communication satellite systems. Discusses the cost of R&D, initial installation, and operation. Responsiveness of the market to increases in transoceanic communication traffic is considered in terms of demand increase over a period of time and in terms of the sensitivity of utilization rates to price reductions. 18 pp. Illus. Presented before the International Symposium on Space Communications, Paris, Sept. 18-22, 1961.

Meckling, W. H.

COMMUNICATIONS SATELLITES: SUPPLEMENTAL INFORMATION ON THE COST ESTIMATES GIVEN IN RM-2709-NASA

RM-2778-NASA June 30, 1961

Prepared at the request of NASA, this RM provides the detailed analytical background for the cost estimates given in RM-2709-NASA (see preceding page). Equations for the computation of costs per voice channel are given and their application explained for communications satellites, submarine cables, and microwave relay systems. 17 pp.

Meckling, W. H. with B. H. Klein, et al.

COMMUNICATIONS SATELLITES AND PUBLIC POLICY: AN INTRODUCTORY REPORT

For abstract, see same title under Klein.

RM-2925-NASA (AD 275936) Dec. 1961

### Title & Abstract

Publication No.

## Meckling, W. H.

THE ECONOMIC IMPORTANCE OF SPACE TECHNOLOGY

P-2585 June 1962

Discusses the economic implications of space technology. Points out the need for a more scientific approach to the question of social consequences of space programs. 8 pp. Presented at the Second National Conference on the Peaceful Uses of Space, Seattle, Wash., May 9, 1962.

## Mesthene, E. G. with

MILITARY RESEARCH AND DEVELOPMENT POLICIES For abstract, see same title under Klein.

R-333 (AD 226128) Dec. 4, 1958

## B. H. Klein & W. H. Meckling

THE NATURE AND FUNCTION OF MILITARY R&D For abstract, see same title under Klein.

P-2147 Nov. 4, 1960

#### Mesthene, E. G. with B. H. Klein &

B. H. Klein & W. H. Meckling

## SCIENCE AND STATECRAFT

P-2462-1 Oct. 1961

and B. C. Denney

Mesthene, E. G.

Investigates ways in which the scientific component of policy can be most effectively exploited for the national security and welfare. Some problems in formulating national security policy result in a reciprocal usurpation of the scientist and policy-making functions. Improvements in existing policy instruments will require mutual realization by the scientist and policy-maker that each needs to learn the other's job for the purpose of doing his own job better. 16 pp.

## Mesthene, E. G. and

S. MacClintock

### THE NATURE OF RESEARCH GOALS: SOME NECES-SARY DEFINITIONS

RM-2858-PR (AD 272828) Jan. 1962

Industrial and governmental agencies whose research missions are other than simply scientific have the problem of defining "useful research goals" that will allow freedom of inquiry and still offer a reasonable probability that the completed research will be useful to the sponsoring organization. The problem is to determine the exact nature of the relevance of research to mission. 29 pp.

### Title & Abstract

Publication No. and Date

#### Mesthene, E. G. THE TITANIUM DECADE

RM-2915-PR (AD 270125)

A discussion of the titanium development pro- Jan. 1962 gram which illustrates inefficiencies inherent in government-industry contractual arrangements aimed at rapid technological advances. More than half the total cost of the program to the Government was the result of subsidizing the creation of a titanium metal industry. It is argued (1) that such future Government programs can be more efficient if they are aimed more directly at the technological objective, and (2) if the contracts with industry contain more direct rewards for R&D work rather than indirect rewards in the form of production orders. 21 pp.

with

Mickey, M. R., Jr. NOTES ON THE OPTIMAL CHOICE OF WEAPONS For abstract, see same title under

P-470

J. Marschak

Milliman, J. W.

with

Marschak.

Nov. 30, 1951

WATER SUPPLY: ECONOMICS, TECHNOLOGY AND POLICY

Book, 1960

J. Hirshleifer & J. DeHaven

For abstract, see same title under

Hirshleifer.

Milliman, J. W.

DECISION MAKING FOR PUBLIC INVESTMENT: DISCUSSION

P-2252

Jan. 15, 1961

Research bearing on two papers presented at the same meeting which deal with decision making for public investment: "Welfare Aspects of Benefit-Cost Analysis," by John M. Krutilla, and "Water and Welfare," by Robert Dorfman. In the light of these papers, the author comments on the RANDsponsored study on water supply. 12 pp. Presented before the joint meeting of the Econometric Society and the Regional Science Assn., St. Louis, Mo., Dec. 30, 1960, and published in the proceedings of that meeting.

### Title & Abstract

## Publication No. and Date

Moore, F. T. and W. Isard REGIONAL SCIENCE TECHNIQUES APPLICABLE TO REGIONAL PLANNING

P-1099 June 4, 1957

Part of a broader investigation concerned with the diverse regional science techniques applicable to regional planning. Some of the more promising techniques are discussed, and the input-output technique is emphasized. 12 pp. Published in the Proceedings of the Second International Conference on Regional Planning and Development, Held at The Hague, July 1957. Presented before the International Seminar on Economic Development and Regional Planning, The Hague, Netherlands, July 1-6, 1957.

Moore, F. T.

THE FAILURES OF THE WORLD BANK MISSIONS

P-1411 June 24, 1958

A critique of the mission reports of the International Bank for Reconstruction and Development, on the problems and characteristics of the underdeveloped economies of some 15 countries. The author found this material unsatisfactory as economic analysis and unsuitable in areas such as statistics, development-program outlines, project delineation, etc. 50 pp. Tables.

Moore, F. T.

CRIMINAL JURISDICTION IN OVERSEAS AREAS

P-1313 Mar. 18, 1959

A discussion of the problems in exercising criminal jurisdiction over American military and civilian personnel in overseas areas. The subject of criminal jurisdiction is covered in that part of the treaties called the "status of forces" agreements, and the paper treats the various factors which make those agreements difficult to apply. The significance of this subject for U.S. foreign policy is emphasized, since it deals with U.S. respect for the sovereignty of other nations. 38 pp. Published in The Journal of Politics, May 1959.

### Title & Abstract

Publication No.

#### Moore, F. T.

ECONOMIC DEVELOPMENT AND THE EMPLOYMENT OF RESOURCES

P-1904 Feb. 5, 1960

Considers the problems of economic growth that face underdeveloped countries. Discusses (1) the theory of balanced and unbalanced growth, (2) the neo-classical competitive model of the economy to discover whether it provides a useful framework for analyzing the conditions and whether derived norms can be found for policies that will help to accelerate the growth of these countries, and (3) some empirical evidence on questions concerning the existence of external economies, the effect of technological change, and the relative costs of development of various sectors in the economy. 42 pp. Presented at the Conference on Natural Resources and Economic Growth, Ann Arbor, Mich., April 7-9, 1960.

#### Moore, F. T.

ECONOMIC GROWTH AND FOREIGN AID: A PROPOSAL CONCERNING THE EXPORT OF INDUSTRIAL PLANTS

P-2287 April 20, 1961

Describes a program that can contribute directly to the growth of the U.S. economy and can also supply needed productive capacity to underdeveloped countrie in Asia, Africa, and Latin America. 20 pp.

#### Moore, F. T.

An account of an economic conference in Geneva, Switzerland, and talks with various people in Paris and London about European attitudes towards foreign aid, economic integration, and domestic economic planning. 19 pp.

# STUDIES IN ECONOMIC PLANNING: A TRIP REPORT P-2469 Oct. 1961

#### Moore, F. T.

ON REGIONAL DEVELOPMENT AND DYNAMIC MODELS

P-2342-1 Nov. 1961

Discusses (1) the problem of criteria for regional development; (2) a growth model based on the maximization of the output-investment ratio, and (3) a reformulation of a regional growth model and some results of its application to the economy of the State of California. 28 pp. Illus. Presented at the International Conference of Economic Development, Geneva, Switzerland, Sept. 1961.

#### Title & Abstract

Publication No. and Date

Moore, F. T. with B. H. Klein

Moore, F. T.

COMMUNICATIONS SATELLITES AND PUBLIC POLICY: RM-2925-NASA AN INTRODUCTORY REPORT

For abstract, see same title under Klein.

(AD 275936) Dec. 1961

- et al.
- URBAN ECONOMIC ACCOUNTS AND RESEARCH

P-2533 Feb. 1962

Comments on two papers delivered before the American Economic Assn. at New York, Dec. 27, 1961. Both papers (one by Dr. Harvey Perloff and the other by Prof. Werner Hirsch) attempt to increase the extent and type of information collected on urban and regional affairs. 4 pp.

Moore, F. T.

MILITARY PROCUREMENT AND CONTRACTING: AN ECONOMIC ANALYSIS

RM-2948-PR (AD 293424) June 1962

A survey of problems of economic efficiency in military procurement and contracting. Gives background material on contracts. Notes the increasing share of procurement represented by cost-plus-a-fixed-fee contracts, and proposes a reclassification of contract types. Suggests the establishment of efficiency classes in incentive contracts so that a "hard" cost target can be set. Cost underruns could then more nearly represent truly efficient behavior rather than poor cost estimating. 148 pp. Illus.

Author(s)	Title & Abstract	Publication No and Date
Moorsteen, R. H.	PRICES OF ROAD BUILDING AND CONSTRUCTION MACHINES, USSR, 1928-1949	RM-1037 (ATI 210781) Feb. 11, 1953
	Part of a larger study concerned with wholesale price movements of all civilian machinery in the USSR. 24 pp. Illus.	
Moorsteen, R. H.	PRICES OF TRACTORS, TRUCKS, AND AUTOMO-BILES, USSR, 1928-1949	RM-1121 (ATI 210483) July 23, 1953
	Discusses price changes for automotive- type products. Part of a broader investi- gation to determine the war potential and vulnerabilities of the Soviet economy 143 pp. Tables.	
Moorsteen, R. H.	PRICES OF PRIME MOVERS, USSR, 1927/28-1949	RM-1225 (AD 90496)
	Contains data on wholesale price move- ments of prime movers in the USSR in the stated time period. Part of the study to determine the war potential of the Soviet economy. 169 pp. Tables.	Mar. 30, 1954
Moorsteen, R. H.	PRICES OF RAILROAD ROLLING STOCK, USSR1927/28-1949	RM-1258 (AD 90499) May 27, 1954
	Data on the trend of wholesale prices of railroad rolling stock in the USSR from 1927/28 to 1949. 66 pp. Tables. Subsequently included in R-370 and forthcoming book (see entry below under 1961).	11, 27,7
Moorsteen, R. H.	COMMENTS ON TECHNOLOGICAL POLICY AND ECONOMIC CALCULATION IN SOVIET INDUSTRY BY DAVID GRANICK	P-1397 Oct. 24, 1958
	A discussion of Prof. Granick's attempt to determine whether the observed technological decisions in the Soviet Union are similar to those derived from economic calculation. 9 pp. Presented before the Symposium on Economic Calculation and Organization in Easter Europe, held at the University of Calif., Berkeley, June 17, 1958.	
Moorsteen, R. H.	ECONOMIC PROSPECTS FOR COMMUNIST CHINA	P-1298
	A review of the first Five-Year Plan of USSR and that of the Chinese People's Re- public. Compares CPR's (cont'd.)	Nov. 10, 1958

#### Title & Abstract

Publication No. and Date

- Moorsteen, R. H. accomplishments so far in heavy industry with the achievements of a comparable period in Soviet history. 58 pp. Published in World Politics, Jan. 1959. Presented to the Association for Asian Studies at New York City, April 1, 1958.
- Moorsteen, R. H. AN ECONOMIC DEVELOPMENT OF STRATEGIC SIGNATURE IN COMMUNIST CHINA

  A discussion of the military implications of the Chinese Communist program, initiated

A discussion of the military implications of the Chinese Communist program, initiated toward the end of 1957, of building very small industrial enterprises to be located in towns, rural villages, or on collective farms. This will result in an unusual decentralization of future economic development and the economy being resilient under enemy attack. 5 pp.

- Moorsteen, R. H. AN INDEX OF SOVIET INDUSTRIAL OUTPUT P-1848
  with For abstract, see same title under Kaplan. Mar. 2, 1960
  N. M. Kaplan
- Moorsteen, R. H. INDEXES OF SOVIET INDUSTRIAL OUTPUT, RM-2495
  with VOLS. I and II (AD 241134)
  N. M. Kaplan For abstract, see same title under Kaplan. May 13, 1960
- Moorsteen, R. H. ON MEASURING PRODUCTIVE POTENTIAL AND P-2119
  RELATIVE EFFICIENCY Oct. 15, 1960

A study showing that for every comparison between two economies there are conceptually four indexes of relative efficiency, which will undoubtedly vary among themselves. Each of the four indexes measures something different, and each fails to show the relative efficiency for the case in which each economy produces in its own proportions from inputs combined in its own proportions.

36 pp. Illus.

#### Title & Abstract

# Publication No. and Date

Moorsteen, R. H.

PRICES AND PRODUCTION OF MACHINERY IN THE SOVIET UNION, 1928-1958 Harvard University Press, Cambridge, Mass. 498 pp. Tables. \$15.00.

Book, 1962, & R-370-PR (ATI 278132)
June 1962

Provides the key quantitative indicators for 30 years of Soviet experience in developing machinery production: indexes of changes in price levels, of changes in output, and of the supply of machinery for purposes of capital construction. The author's raw materials are individual price quotations, gleaned from handbooks and documents used for domestic transactions in the Soviet economy, together with the statistics of physical output for some 200 items of machinery. These data are aggregated by standard methodology into price and production indexes. "Real" investment in machinery is computed by the deflation of investment in current prices. Also published as R-370-PR (ATI 278132).

#### Title & Abstract

Publication No.

Nelson, R. R.

THE SIMPLE ECONOMICS OF SCIENTIFIC RESEARCH: A THEORETICAL ANALYSIS

P-1288 April 28, 1958

Determines how much expenditure on basic research is socially desirable and the extent to which a private firm can capture through the market the increased value of output resulting from the scientific research that it sponsors. 20 pp. Published in The Journal of Political Economy, April 1959.

Nelson, R. R.

GROWTH MODELS AND THE ESCAPE FROM THE LOW-LEVEL EQUILIBRIUM TRAP: THE CASE OF JAPAN P-1537 Jan. 6, 1959

Restates the equilibrium growth model and the special case of the low-level equilibrium trap. Japanese economic growth from 1868 is shown as an escape from the low level equilibrium trap and as a takeoff into sustained growth. Although Schumpeterian innovation is probably the primary factor explaining increased output from given factor endowments in advanced economies, improved and fuller allocation may be more important in backward economies. 23 pp. Illus. Published in Economic Development and Cultural Change, 1959.

Nelson, R. R.

THE ECONOMICS OF INVENTION: A SURVEY OF THE LITERATURE

RM-2146-1 (AD 209021) Jan. 15, 1959 &

A selective summary of the literature on the P-1604 economics of invention. Both growing social Jan. 1959 demand and new scientific knowledge are examined as factors stimulating inventive effort. The comparative importance of the private inventory and the research and development laboratory are appraised. Stresses the great uncertainties which still surround inventive effort and investigates how this uncertainty affects management practices in industrial-research laboratories. 59 pp. Published in the Journal of Business, April 1959.

### Title & Abstract

Publication No. and Date

Nelson, R. R. UNCERTAINTY, PREDICTION, AND COMPETITIVE EQUILIBRIUM

P-1687 May 5, 1959

Analyzes market prediction in terms of value theory. Given a cost curve and a frequency distribution of demand, greater ability to predict will result in greater average profit and average industry output, and smaller average price and variation of price. Differing ability to predict affects even the slope of the supply curve. 28 pp. Illus. Published in the Quarterly Journal of Economies, Feb. 1961.

Nelson, R. R.

THE ECONOMICS OF PARALLEL R&D EFFORTS

P-1774

Aug. 24, 1959

Examines the logic of the parallel-path approach to the solution of development problems. Discusses under what conditions parallel work on several alternatives will prove to be good strategy. 29 pp. Tables.

Nelson, R. R.

THE ECONOMICS OF PARALLEL R&D EFFORTS: A SEQUENTIAL-DECISION ANALYSIS

RM-2482 (AD 234041)

Nov. 12, 1959

A mathematical model designed to implement a major conclusion of RAND's continuing study of Air Force R&D policies. Through the use of sequential-decision theory, the model attempts to explore parallel development in a more quantitative way. 43 pp. Illus. (See also R-333 under Klein.) Published in Review of Economics and Statistics, Nov. 1961.

Nelson, R. R.

THE LINK BETWEEN SCIENCE AND INVENTION: THE CASE OF THE TRANSISTOR

P-1854

Dec. 15, 1959

A case study of basic research in industry. Focuses on the factors affecting the allocation of research resources in a science-oriented industrial research lab. A history of the research that led to the transistor is presented. Generalizes on the characteristics of research and what they imply relative to problems of research management. 54 pp. Illus. Presented before the Conference on the Economic and Social Factors Determining the Rate and Direction of Inventive Activity, University of Minnesota, May 12-14, 1960.

#### Title & Abstract

Publication No. and Date

#### Nelson, R. R.

A NOTE OF STABILITY, AND THE BEHAVIOR ASSUMPTIONS OF HARROD-TYPE MODELS

P-1971 April 20, 1960

Examines some implications of introducing into the desired investment equation of a Harrod-Domar model, a term relating to the existing state of capital shortage or surplus. Shows that Rose's amended model is marked by great instability, but after some perturbations the economy can return to equilibrium and is even capable of rather lengthy periods of full employment growth at the top of a boom. 23 pp. Illus. Published in The Economic Journal, June 1961.

#### Nelson, R. R. and

WEATHER INFORMATION AND ECONOMIC DECISIONS -- A PRELIMINARY REPORT

RM-2620-NASA Aug. 1, 1960

S. Winter, Jr.

Studies economic benefits from improvements in weather forecasting. Shows how the value of the forecasting service depends on the characteristics of the decision problem and on the quality of the forecasts. Includes case studies of different kinds of firms and how improved weather forecasting could affect operating costs. Examines the problem of how the forecasts themselves should be made if maximum economic benefit is to be derived from knowledge of weather phenomena. 126 pp. Illus.

#### Nelson, R. R.

INTRODUCTION TO THE UNBER-SSRC CONFERENCE ON INVENTIVE ACTIVITY

P-2073 Aug. 15, 1960

An introduction to a volume of papers presented at a conference on inventive activity, held at the University of Minnesota, May 12-14, 1960. Discusses the reasons for the developing interest in inventive activity. Outlines the principal topics including: classical economies approach and the black box; concept of parallel inventive efforts; profits from inventions; nonmarket factors; and invention and policy. 20 pp.

#### Nelson, R. R. with

PUBLIC POLICY

RESEARCH AND ECONOMIC GROWTH -- THE ROLE OF

P-2089-3 Aug. 10, 1961

B. F. Massell

For abstract, see same title under Massell.

#### Publication No. Author(s) Title & Abstract and Date Neuberger, E. THE ECONOMICS OF COMPENSATING BALANCES P-2203 Jan. 25, 1961 An analysis of various aspects of compensating balances in the monetary system. Considers the general types of compensating balances, specific examples of these balances, some quantitative evaluation of their size, the advantages and disadvantages of these balances, and the effect their existence has on the effectiveness of monetary policy. 33 pp. Illus. THE CAPACITY OF A RAILROAD FREIGHT YARD Newell, A. RM-555 (A SURVEY OF THE PROBLEM -- NOT A SOLUTION) (AD 116562) June 14, 1950 A study of the ability of a railroad freight yard to receive, hold, and deliver freight cars upon order. 17 pp. Illus. Nichols, R. T. THE GERMAN MUNITIONS PRODUCTION INDEX: RM-346 WORLD WAR II (ATI 210630) Feb. 2, 1950 A publication of the annual and monthly index numbers for German munitions production as a whole, and for several groups and subgroups in World War II. 26 pp. Tables. Nichols, R. T. THE EUROPEAN COAL AND STEEL COMMUNITY P-2388 Aug. 15, 1961 Presents the purposes of the ECSC Treaty, its aims, institutions, and scope. Discusses the tariffs and quotas on trade within the Community, and the management, price publication, and competition controls of the High Authority. 38 pp. Tables. Nichols, R. T. THE EUROPEAN COAL AND STEEL COMMUNITY RM-3107-PR (AD 277521) Studies the European Coal and Steel Com-June 1962 munity (ECSC) up to 1961 as a forerunner of the European Economic Community. Although devoted to the ECSC alone, the Memorandum concentrates on those aspects of ECSC experience that are relevant to an analysis of the institutions and limitations of the European Economic Community, and therefore to an understanding of the prospects for European political and military unity. 47 pp. Tables.

#### Title & Abstract

## Publication No. and Date

Niedercorn, J. H. A MACRO INVESTMENT MODEL FOR MANUFACTURING

P-2468-1 Feb. 1962

The derivation, statistical testing, and evaluation of a new investment model for investment in manufacturing industries. Two macro investment functions are deduced from the model which show that aggregate investment depends on the rate of growth of total output, the gap between desired and actual capital stock, and a change in profit variable to show the state of short-run expectations. 23 pp. Tables.

Niedercorn, J. H. with

J. F. Kain

CHANGES IN THE LOCATION OF FOOD AND GENERAL MERCHANDISE STORE EMPLOYMENT WITHIN METRO-POLITAN AREAS, 1948-1958

P-2614-1 Aug. 15, 1962

Derives a model to explain changes in retail employment in central cities and metropolitan rings. Statistical testing indicates that changes in population and labor productivity were the most important determinants of changes in food and general merchandise store employment in 39 metropolitan areas over the period 1948-1958. 23 pp. Published in the <u>Journal of the Western Economic Association</u>, Spring 1963.

Niedercorn, J. H. and J. F. Kain AN ECONOMETRIC MODEL OF METROPOLITAN DEVELOPMENT

P-2663 (AD 292170) Dec. 1962

Part of a broader study concerned with the pattern of land use-transportation inter-relationships within urban areas. This paper presents a model of the population and employment changes from 1954 to 1958 in the 39 largest Standard Metropolitan Statistical Areas. 38 pp. Illus. Presented before a joint session of the Econometric Society and the Regional Science Association, Pittsburgh, Pa., Dec. 28, 1962.

Author(s)	Title & Abstract	Publication No.
Nimitz, A. E. (Nancy) with A. Gerschenkron	A DOLLAR INDEX OF SOVIET PETROLEUM OUTPUT, 1927-28 to 1937 For abstract, see same title under Gerschenkron.	RM-804 (ATI 210413) April 4, 1952
Nimitz, A. E.	A DOLLAR INDEX OF SOVIET COAL OUTPUT, 1927/28-1937	RM-1042 (ATI 210782) Feb. 18, 1953
	The third in a series of studies of heavy industry output in the USSR. The present study attempts to measure the increase in Soviet coal output expressed in terms of U.S. dollars of 1939 purchasing power. 97 pp. Tables.	reu. 10, 1933
Nimitz, A. E. with A. Gerschenkron	A DOLLAR INDEX OF SOVIET IRON AND STEEL OUTPUT, 1927/28-1937 For abstract, see same title under Gerschenkron.	RM-1055 (ATI 210784) March 13, 1953
Nimitz, A. E.	THE NEW SOVIET AGRICULTURAL DECREES (SEPTEMBER PLENUM, 1953)	RM-1178 (ATI 210489)
	A discussion of various documents, published in Pravda from August 9 to October 1, 1953, in which the Soviet government analyzed the present defects of Soviet agriculture, condemned some past errors in agricultural policy, and announced a program to increase agricultural output. 92 pp. Tables.	Jan. 13, 1954
Nimitz, A. E.	STATISTICS OF SOVIET AGRICULTURE	RM-1250 (AD 90498)
	Presents data on the output and productive capital of Soviet agriculture from 1928 to 1953, excluding the war years. 96 pp. Tables.	May 7, 1954
Nimitz, A. E.	PRICES OF REFINED PETROLEUM PRODUCTS IN THE USSR, 1928-1950	RM-1497 (AD 90550)
	A summary of changes in Soviet wholesale prices of refined petroleum products from 1928 to 1950. Part of a broad investigation expected to provide a basis for calculating deflators for components of national income data in current rubles. 120 pp. Tables.	May 26, 1955

#### Publication No. Author(s) Title & Abstract and Date SOVIET AGRICULTURE SINCE THE SEPTEMBER Nimitz, A. E. RM-1552 (Nancy) 1953 REFORMS (AD 90552) Sept. 15, 1955 A review of Soviet agricultural developments to 1955, emphasizing (1) efforts to raise grain production through expansion of sown area and increase in corn sowings, (2) institutional changes, and (3) procurement practices and prices. 191 pp. Tables. SOVIET STATISTICS OF MEAT AND MILK OUTPUT: Nimitz, A. E. RM-2326 A NOTE ON THEIR COMPARABILITY OVER TIME (AD 211642) Feb. 6, 1959 A review of evidence indicating that data recently published by the USSR on statistics of meat and milk output have a broader coverage than data published in the prewar period. 37 pp. Tables. Nimitz, A. E. SOVIET NATIONAL INCOME AND PRODUCT, RM-2101 with 1949-1955 (AD 213477) O. Hoeffding For abstract, see same title under April 6, 1959 Hoeffding. SOVIET NATIONAL INCOME AND PRODUCT, 1956-1958 RM-3112-PR Nimitz, A. E. 1956-1958 (AD 276933)

June 1962 Presents estimates of the national income and product of the USSR at current actual prices for the years 1956-1958, and at current adjusted prices (ruble factor cost) for 1949-1958. Shows that from 1956-1958, the share of gross investment rose from 26 to 28 per cent (30 to 32 per cent at adjusted prices), while the share going to consumption remained constant at about 56 per cent (50 per cent at adjusted prices). Per capita consumption, deflated to constant prices, increased at an average rate of 6 per cent a year, compared with 9 per cent for 1953-1955. The share of defense outlays declined from 7.3 to 5.9 per cent of total GNP (8.5 to 6.8 per cent at adjusted prices). Since prices of military goods may have fallen significantly (unlike comparatively stable prices of civilian goods and services), real defense outlays probably increased more than money outlays. 189 pp. Tables.

#### Title & Abstract

## Publication No. and Date

Porch, H.

MISSILE SAFETY -- THE UNSUNG EFFORT BEHIND THE SPACE PROGRAM

P-2630 Oct. 1962

Discusses the USAF program and organization to assure safety in design, handling, and operation of the missiles in the space program. 6 pp. Published in <u>Skylights</u>, Jan. 1963, and in <u>National Defense Transportation Journal</u>, March-April 1963.

Powell, R. P.

A MATERIALS-INPUT INDEX OF SOVIET CONSTRUCTION 1927/28 TO 1955 -- PART I

RM-1872 (AD 133014) Feb. 14, 1957

An attempt to estimate changes in the physical volume of construction in the USSR from 1928 to 1955. An index of the volume of materials employed in construction, weighted by 1937 prices, is compiled as an estimate of the index of the physical volume of construction. Alternative methods of measuring the volume of construction are discussed and the results of such methods are compared. 88 pp. Illus. See revision, RM-2454.

Powell, R. P.

A MATERIALS-INPUT INDEX OF SOVIET CONSTRUCTION, 1927/28 TO 1955 -- PART II: APPENDICES

RM-1873 (AD 133015) Feb. 14, 1957

A continuation of RM-1872. Gives the detailed data, sources, and methods underlying the index of the physical volume of construction described in Part I. 559 pp. Tables. See revision, RM-2454.

Powell, R. P.

A MATERIALS-INPUT INDEX OF SOVIET CONSTRUCTION, REVISED AND EXTENDED

RM-2454 (AD 232651) Sept. 28, 1959

A revision of RM-1872 and RM-1873 which extends the index to 1958. New data recently published in the USSR are incorporated, leading to more reliable estimates of changes over time of the volume of construction. These estimates serve as component indicators of Soviet national income and product and provide data for analyses of Soviet economic war potential. 98 pp. Tables.

Author(s)	Title & Abstract	Publication No.
Redding, A. D.	DISTRIBUTION OF USSR NONAGRICULTURAL EMPLOYMENT, 1928-1950: A PRELIMINARY STUDY  Estimates of USSR nonagricultural employment by broad sectors of the economy, 1928-1941, and by individual industries, 1928-1937. Summary data for later years are also shown. Estimates are compared with similar data for the U.S. 18 pp. Illus.	RM-703 (ATI 210393) Oct. 18, 1951
Redding, A. D.	RELIABILITY OF ESTIMATES OF UNFREE LABOR IN THE USSR  An analysis of the Jasny article on the size of the Russian unfree labor force, "Labor and Output in Soviet Concentration Camps." Exami the crucial role which conjecture plays in hi discussion and the errors in his interpretation data in the 1951 Plan. 7 pp. Published in The Journal of Political Economy, Aug. 1952.	nes s on
Redding, A. D. with N. Kaplan, et. al.	A TENTATIVE INPUT-OUTPUT TABLE FOR THE USSR, 1941 PLAN For abstract, see same title under Kaplan.	RM-924 (ATI 210756) Sept. 2, 1952
Redding, A. D.	EMPLOYMENT AND LABOR PRODUCTIVITY IN USSR RAILROADS, 1928-1950  A descriptive survey of employment, traffic volume, and labor productivity in USSR railroads from 1928-1950. Certain railroad time series, culled from a variety of official and semi-official Soviet sources, are determined. 31 pp. Illus. Published in Soviet Studies, July 1953.	
Reiger, S. H. with W. H. Meckling	COMMUNICATIONS SATELLITES: AN INTRODUCTORY SURVEY OF TECHNOLOGY AND ECONOMIC PROMISE For abstract, see same title under Meckling	RM-2709-NASA Sept. 15, 1960
Reiger, S. H. with W. H. Meckling	ECONOMIC ASPECTS OF COMMUNICATION SATELLITE SYSTEMS For abstract, see same title under Meckling	P-2396 June 3, 1961
Reiger, S. H. with B. H. Klein, et al.	COMMUNICATIONS SATELLITES AND PUBLIC POLICY: AN INTRODUCTORY REPORT For abstract, see same title under Klein.	RM-2925-NASA (AD 275936) Dec. 1961

Author(s)	Title & Abstract	Publication No.
Remer, C. F.	THE TRADE AGREEMENTS OF COMMUNIST CHINA	P-2208 Feb. 1, 1961
	A study into the nature and significance of the trade agreements of Communist China. Emphasizes economic aspects but includes political and other implications. 130 pp. Tables.	
Rodin, N. W.	PRODUCTIVITY IN SOVIET IRON MINING, 1890-1960	RM-1116 (ATI 210792) July 7, 1953
	Analyzes the labor productivity trends in Soviet mining from 1890 to 1940. Estimates the approximate productivity level expected in 1960. 50 pp. Tables.	
Rowe, A. J. and H. M. Markowitz	AN ANALYSIS OF MACHINE TOOL SUBSTITUTION POSSIBILITIES	RM-1512 (AD 87449) June 30, 1955
n. n. rairoutos	Data required for a process analysis of the metal working industry on an economy-wide scale. The conceptual framework of a machine tool substitution analysis is examined together with the empirical problems encountered the parameters of the model considered and related matters are estimated. 96 pp. Illustrated.	ed.
Rowe, A. J.	A COMPENDIUM OF PRESSWORKING OPERATIONS	RM-1549 (AD 87811)
	A supplement to RM-1512. The present investigation classifies pressworking equipment and its tasks and discusses the selection, operation, and characteristics of this equipment. 26 pp. Illus.	Sept. 12, 1955
Rowen, H. S.	IS DEFENSE SPENDING WASTEFUL?	P-1660 June 1, 1959
	Stresses that the weapons we buy, especially in the thermonuclear age, contribute to our welfare. This view is independent of the level of our defense spending. It applies to any level of budget, and to decreases as well as increases. 7 pp. Published in Challenge Magazine, June 1959.	
Rowen, H. S. and A. C. Enthoven	DEFENSE PLANNING AND ORGANIZATION For abstract, see same title under Enthoven.	P-1640 July 28, 1959

### Title & Abstract

# Publication No. and Date

## Samuelson, P. A. NOTE ON OPTIMAL DECISIONS IN DIFFERENTIAL EQUATION PROCESSES

RM-114 March 1, 1949

Demonstrates the falsity of the supposition that anything that maximizes the instantaneous growth of net strength will also maximize it over time in relation to optimal procedures in some Lancaster-type war models. 3 pp.

- Samuelson, P. A. with
- LINEAR PROGRAMMING AND ECONOMIC ANALYSIS
  For abstract, see same title under Dorfman.

1958

- R. Dorfman & R. M. Solow
- Schelling, T. C. RE-INTERPRETATION OF THE SOLUTION CONCEPT FOR "NON-COOPERATIVE" GAMES

P-1385 June 2, 1958

Discusses coordination-game theory, suggesting that the "solution in the strict sense" of a tacit non-zero-sum game is to be understood largely by reference to its signalling qualities. 17 pp. Illus. Incorporated in The Strategy of Conflict, Harvard University Press, Cambridge, Mass., 1960.

Schelling, T. C. FOR THE ABANDONMENT OF SYMMETRY IN THE THEORY OF COOPERATIVE GAMES

P-1386 May 29, 1958

Argues that the pure "moveless" bargaining game may not exist or, if it does, is of different character from that generally supposed, and that symmetry in the solution of bargaining games cannot be supported on the notion of "rational expectations." The point of departure for this argument is the operational identification of irrational expectations. 29 pp. Published in The Review of Economics and Statistics, Aug. 1959. Incorporated in The Strategy of Conflict, Harvard University Press, Cambridge, Mass., 1960.

#### Title & Abstract

## Publication No. and Date

### Schelling, T. C. THE RECIPROCAL FEAR OF SURPRISE ATTACK

P-1342 April 16, 1958

An analysis of the idea that initial probabilities of surprise attack become larger through a "multiplier" effect as a result of the compounding of each person's fear of what the other fears. 28 pp. Illus. Presented before the Econometric Society at Chicago Ill., Dec. 27, 1958. Abstract of this paper published in Econometrica, July 1959.

## Schelling, T. C. PROSPECTUS FOR A REORIENTATION OF GAME THEORY

P-1491 Sept. 17, 1958

An attempt to extend the scope of game theory using the zero-sum game as a limiting case rather than as a point of departure. Indentifies the perceptual and suggestive element in the formation of mutually consistent expectations and identifies some of the basic "moves" that may occur in actual games of strategy and the structural elements on which the moves depend. 125 pp. Illus. Published in The Journal of Conflict Resolutions, Sept. 1958. Incorporated in The Strategy of Conflict Harvard University Press, Cambridge, Mass., 1960.

#### Schelling, T. C. SURPRISE ATTACK AND DISARMAMENT

P-1574 Dec. 10, 1958

Examines the relation of surprise-attack schemes to the general idea of "disarmament" and to the stability of a situation of mutual deterrence. Discusses the problem of safe-guards against war, and the question of whether successful surprise attack schemes will leave us incapable of deterring anything but a massive attack. 50 pp. Presented before the Conference on NATO Strategy for the Security of the West, Princeton University, Jan. 15, 1959.

#### Title & Abstract

Publication No.

Schelling, T. C. RANDOMIZATION OF THREATS AND PROMISES

P-1716 June 5, 1959

An investigation of randomization in non-zerosum games. Finds rationale for a "fractional threat," and also considers whether the tactic of "unconditional commitment" can advantageously be made less than certain. 13 pp. Illus. Incorporated in The Strategy of Conflict, Harvard University Press, Cambridge, Mass., 1960.

Schelling, T. C. NUCLEAR WEAPONS AND LIMITED WAR

RM-2510 (AD 234652) Dec. 29, 1959

Part of an investigation on the objectives of the general and limited war forces of the U.S. and on the relationship of these objectives to force composition. The nature and meaning of "limit" in limited war is investigated, with emphasis on the limit inherent in distinguishing between conventional and nuclear weapons. 15 pp. Also published as P-1620. Incorporated in The Strategy of Conflict, Harvard University Press, Cambridge, Mass., 1960.

Schelling, T. C. THE ROLE OF THEORY IN THE STUDY OF CONFLICT

RM-2515 (AD 234653) Jan. 13, 1960

Part of the same investigation as RM-2510. J
Develops the hypothesis that politicalmilitary strategy on the international level
is an underdeveloped science. The author believes that requisite to the study of international relations is a systematic theory
of conflict encompassing such concepts as
deterrence, "brinkmanship," "arms race," and
"accidental war." Shows the need for such a
theory, suggests some of the ingredients and
characteristics of the theory, and examines
the way in which it might be applied to practical problems of international affairs. 52 pp.

Shapiro, M. B.

W. M. Jones

with

RM-2525

(AD 237155)

Feb. 9, 1960

#### Publication No. Author(s) Title & Abstract and Date Scitovsky, T. MOBILIZING RESOURCES FOR WAR: THE ECONOMIC Book, 1951 and ALTERNATIVES E. S. Shaw McGraw-Hill Book Company, Inc., New York, & L. Tarshis 284 pp. \$4.50. An approach to problems placed on the national economy by full or partial mobilization. Three programs of economic control to ensure the transfer of resources to mobilization without inflation are examined, together with alternatives. Includes projections of employment, national income, and national war potential for 1951-1956 and a critical analysis of World War II control techniques. Shabad, T. THE SOVIET CONCEPT OF ECONOMIC REGIONALIZA-P-269 TION Feb. 19, 1952 An attempt to clarify the Soviet concept of economic regionalization. Discusses the criteria shaping the economic regions in the USSR, and the extent to which the tools of Western regional analysis are applicable to the Soviet concept and practice. 12 pp. Presented before the International Geographic Congress at Washington, D. C., Aug. 1952. Published in Geographical Review, April 1953. Shabad, T. POPULATION OF MAJOR CITIES OF THE USSR RM-815-1 (ATI 168594) Presents lists of USSR cities with estimated June 10, 1952 1950 populations. A discussion of methodology is presented, followed by a basic list, alphabetically arranged, containing such data as population estimate, margin of error, and administrative location, and a supplementary list, arranged by size groups. 25 pp. Shapiro, M. B. THE FLIGHT OPERATIONS PLANNER RM-2415 with For abstract, see same title under Jones. (AD 227738) W. M. Jones & July 16, 1959 N. Z. Shapiro

THE FLIGHT OPERATIONS PLANNER, ADDENDUM

For abstract, see same title under Jones.

TO RM-2415

Author(s)	Title & Abstract	Publication No.
Shapiro, N. Z. with W. M. Jones & M. B. Shapiro	THE FLIGHT OPERATIONS PLANNER For abstract, see same title under Jones.	RM-2415 (AD 227738) July 16, 1959
Shaw, E. S. with T. Scitovsky & L. Tarshis	MOBILIZING RESOURCES FOR WAR: THE ECONOMIC ALTERNATIVES For abstract, see same title under Scitovsk	Book, 1951 y.
Shephard, R. with K. J. Arrow, et al.	A TIME SERIES ANALYSIS OF INTERINDUSTRY DEMANDS For abstract, see same title under Arrow.	Book, 1959
Simon, H. A.	A FORMAL THEORY OF THE EMPLOYMENT RELATION-SHIP	P-204 Dec. 7, 1950
	A generalized model which incorporates rational grounds for the choice by two individuals between an employment contract and a sales contract. 18 pp. Illus. Published in Econometrica, July 1951. Presented before the Cowles Commission at Chicago, Oct. 13-14, 1950.	
Simon, H. A.	Suggests a framework that permits a comparison of the economist's theory of the firm and the administrator's theory of organizational equilibrium. 21 pp. Published in The Review of Economic Studies, Jan. 1953. Presented before the Cowles Commission at Chicago, Ill., Oct. 13, 1951.	P-219 June 19, 1951
Simon, H. A.	ON THE APPLICATION OF SERVOMECHANISM THEORY IN THE STUDY OF PRODUCTION CONTROLA STUDY IN THE THEORY OF ORGANIZATION  An application of the servomechanism theory to the analysis and design of decisional procedures for controlling the rate of manufacturing activity. 30 pp. Illus. Published in Econometrica, April 1952. Presented before a Seminar on Communication Theory at Columbia University in New York, April 10, 1951.	P-234 Aug. 15, 1951

Author(s)	Title & Abstract	Publication No.
Simon, H. A.	A BEHAVIORAL MODEL OF RATIONAL CHOICE  A description of a model which defines ra-	P-365 Jan. 20, 1953
	tional choice by organisms of limited computational ability. 16 pp. Published in The Quarterly Journal of Economics, Feb. 1955	•
Skogstad, A. and A. Kaplan &	THE PREDICTION OF SOCIAL AND TECHNOLOGICAL EVENTS	P-93 April 1, 1949
M. A. Girshick	A report on a pilot study of the prediction of social and technological events. From questioning 26 predictors, certain criteria were estimated: the success of such prediction, its possible improvement, and the prior appraisal of the success to be expected. 31 pp. Published in the Public Opinion Quarterly, Spring, 1950.	
Skogstad, A. L.	PETROLEUM INDUSTRY OF GERMANY DURING THE WAR	RM-428 (ATI 210651) April 26, 1950
	A study of the major factors contributing to the success of the Allies in disrupting the German petroleum industry in 1944. Covers the principal characteristics of that industry, German measures to ensure an adequate supply, industrial recuperability, plant vulnerability to bombing, and methods used by the Allies to stop production. 43 pp.	
Skogstad, A. with A. A. Alchian & N. Hanunian	ESTIMATING OUTPUT FROM FLOOR SPACE: FEASIBILITY For abstract, see same title under Alchian.	RM-563 (ATI 210689) Mar. 13, 1951
Snow, R. N. with H.M.Markowitz	THE PROBLEM OF DEFINING AND MEASURING RAIL-ROAD CAPACITY For abstract, see same title under Markowitz.	RM-951 (ATI 210765) Sept. 23, 1952

## Title & Abstract

Publication No. and Date

Salow, R. M. with

LINEAR PROGRAMMING AND ECONOMIC ANALYSIS
For abstract, see same title under
Dorfman.

1958

R. Dorfman & P. A. Samuelson

JAPAN'S ECONOMIC FUTURE IN ASIA

P-993

Dec. 14, 1956

Covers the interaction of Japanese economic activity with the future economic trends in Asia, and the objectives of Japan simultaneously to eliminate its dollar import balance, to pay reparations, and to expand trade with Asia. The implications of these findings are examined in relation to U.S. foreign policy. 111 pp. Tables.

Stout, D.

Author(s)	Title & Abstract	Publication No.
Tarshis, L. with T. Scitovsky & E. S. Shaw	MOBILIZING RESOURCES FOR WAR: THE ECONOMIC ALTERNATIVES For abstract, see same title under Scitovsky.	Book, 1951
Taylor, W. W.	COLD WATER ON SALT WATER  A summary of a survey on the technology and economics of water supply. Delineates the problems of water supply and indicates the important areas of research. 22 pp.	P-546 July 16, 1954
Taylor, W. W.	THE CAUSES OF SYSTEMATIC ERROR IN THE COST ESTIMATES OF PUBLIC WORKS BY R. GIGUET AND G. MORLAT (PARIS, 1952)	T-76 Aug. 27, 1957
	Discusses two main reasons for underestimation of construction costs: (1) the probability density function of cost estimates is not symmetric, and estimates tend to be based on model rather than mean values; (2) as projects are chosen in part by their estimate costs, a bias results toward those projects whose costs have been underestimated. 29 pp. Illus.	d
Turgeon, E. L. with A. Bergson	PRICES OF IRON AND STEEL PRODUCTS IN THE SOVIET UNION, 1928-1950: A SUMMARY REPORT For abstract, see same title under Bergson.	RM-802 (ATI 210411) March 26, 1952
Turgeon, E. L.	PRICES OF METALWORKING EQUIPMENT IN THE SOVIET UNION, 1928-1951  Calculates the index numbers of metalworking equipment prices in the USSR from 1928-1951. 76 pp. Tables.	RM-1112 (ATI 210790) June 30, 1953
Turgeon, E. L.	PRICES OF INDUSTRIAL ELECTRIC POWER IN THE SOVIET UNION, 1928 to 1950  Data on the index numbers of electric energy prices used by Soviet industry from 1928 to 1950. Part of a study to calculate the dollar equivalent of current Russian industrial and military output. 62 pp. Tables.	RM-1244 (AD 90497) April 27, 1954
Turgeon, E. L. with A. Bergson	PRICES OF ORDINARY ROLLED STEEL IN THE SOVIET UNION, 1928-1950 For abstract, see same title under Bergson.	RM-767-1 (AD 96723) Dec. 10, 1954
Turgeon, E. L. with A. Bergson	PRICES OF QUALITY ROLLED STEEL IN THE SOVIET UNION, 1928-1950 For abstract, see same title under Bergson.	RM-778-1 (AD 96722) Feb. 1, 1955

Author(s)	Title & Abstract	Publication No and Date
Turgeon, E. L.	PRICES OF COAL AND PEAT IN THE SOVIET UNION, 1928-1950	RM-1423 (AD 90508) Feb. 2, 1955
	Considers coal and peat prices in the Soviet Union from 1928 to 1950. Part of a broader study to provide a basis for calculating the dollar equivalent of current Russian industrial and military output. 82 pp. Tables.	
Turgeon, E. L. and R. Bernaut & A. Bergson	PRICES OF MISCELLANEOUS BASIC INDUSTRIAL PRODUCTS, USSR, 1928-1950	RM-1482 (AD 90549) May 9, 1955
	A study of wholesale prices of miscellaneous basic industrial products in the USSR from 1928 to 1950. Part of a broader investigation to provide a basis for estimating rates of change in the output of various sectors of the Soviet economy. 147 pp. Tables.	
Turgeon, E. L. and A. Bergson	PRICES OF NONFERROUS METALS IN THE SOVIET UNION, 1928 to 1950	RM-1030-1 (AD 96717) June 9, 1955
	A study to determine an index number of nonferrous metal prices in the Soviet Union from 1928-1950. Only nonferrous metals for industrial use are considered. 96 pp. Tables	
Turgeon, E. L. with A. Bergson & R. Bernaut	BASIC INDUSTRIAL PRICES IN THE USSR, 1928- 1950: TWENTY-FIVE BRANCH SERIES AND THEIR AGGREGATION For abstract, see same title under Bergson.	RM-1522 (AD 87546) Aug. 1, 1955
Turgeon, E. L. with A. Bergson & R. Bernaut	PRICES OF BASIC INDUSTRIAL PRODUCTS IN THE USSR, 1928-1950 For abstract, see same title under Bergson.	P-789 Jan. 12, 1956
Turgeon, E. L. and A. Bergson	PRICES OF BASIC INDUSTRIAL GOODS IN THE USSR, 1950 TO 1956: A PRELIMINARY REPORT	RM-1919 (AD 144262) June 12, 1957
	A continuation of P-789. Extends wholesale price movements for basic industrial products in the USSR from 1950 to 1956. Compiles index numbers of wholesale prices and for basic industrial goods generally. The period studied represents the first extended period of general decline of industrial prices since the inauguration of the Soviet five-year plans. 86 pp. Tables.	

### Title & Abstract

# Publication No. and Date

Twanmo, Chang

PRODUCTION OF FOOD CROPS IN MAINLAND CHINA: PREWAR AND POSTWAR

RM-1659 (AD 95138) March 22, 1956

Part of a series of studies concerned with agriculture production in China to determine the accuracy of the output data released by the Communists since their seizure of the Chinese mainland in 1949. The statistics are given mainly in terms of the Chinese system of weights and measures. 84 pp. Illus.

#### Title & Abstract

## Publication No. and Date

Vogely, W. A.

A CASE STUDY IN THE MEASUREMENT OF GOVERNMENT OUTPUT

RM-1934-RC July 9, 1957

An examination of the Bureau of Land Management, U.S. Department of Interior, that seeks to identify Bureau outputs and to value them, wherever possible, in terms directly commensurate with inputs. Minerals, land, grazing, and forestry programs are examined for this purpose and to appraise their efficiency. The general aim throughout is to demonstrate the feasibility of such case studies. Methodological implications are stressed. 185 pp. Illus.

Author(s)	Title & Abstract	Publication No.
Wainstein, E. S.	A COMPARISON OF SOVIET AND UNITED STATES RETAIL FOOD PRICES FOR 1950	RM-1294 (AD 90502) July 13, 1954
	Part of a larger study to determine the dollar equivalent of current Soviet industrial and military output. Compares USSR and U.S. retail food prices for 1950. 46 pp. Tables.	
Wainstein, E. S.	A COMPARISON OF SOVIET AND UNITED STATES RETAIL PRICES FOR MANUFACTURED GOODS AND SERVICES IN 1950	RM-1606 (AD 90551) Jan. 5, 1956
	Part of a broader investigation expected to provide a basis for calculating the dollar equivalent of current Soviet industrial and military output. The present study compares Soviet and U.S. retail prices for manufacture goods and services in 1950. 111 pp. Tables.	ed.
Wainstein, E. S. with N. M. Kaplan	A COMPARISON OF SOVIET AND AMERICAN RETAIL PRICES IN 1950 For abstract, see same title under Kaplan.	RM-1692-1 (AD 100024) Oct. 3, 1956
Wainstein, E. S. with N. M. Kaplan	AN ADDENDUM TO PREVIOUS USSR-U.S. RETAIL PRICE COMPARISONS For abstract, see same title under Kaplan.	RM-1906 (AD 123547) May 13, 1957
White, W. L. with N. M. Kaplan	A COMPARISON OF 1950 WHOLESALE PRICES IN SOVIET AND AMERICAN INDUSTRY For abstract, see same title under Kaplan.	RM-1443 (AD 91181) May 1, 1955
Winsten, C. B. with M. Beckmann, et al.	THE ALLOCATION OF SWITCHING WORK IN A SYSTEM OF CLASSIFICATION YARDS For abstract, see same title under Beckmann.	P-448 Dec. 5, 1953
Winsten, C. B. with M. Beckmann & C. B. McGuire	STUDIES IN THE ECONOMICS OF TRANSPORTATION For abstract, see same title under Beckmann.	RM-1488 (AD 90419) May 12, 1955

B. F. Massell

#### Publication No. Author(s) Title & Abstract and Date WEATHER INFORMATION AND ECONOMIC DECISIONS --RM-2620-NASA Winter, S., Jr. with A PRELIMINARY REPORT Aug. 1, 1960 R. R. Nelson For abstract, see same title under Nelson. Winter, S., Jr. ECONOMIC NATURAL SELECTION AND THE THEORY P-2167 OF THE FIRM Dec. 19, 1960 Discusses the relationship between analysis of economic natural selection and direct theorizing about firm behavior. Concludes that those searching for a better theory of the firm will benefit from using the guidance that economic natural selection considerations offer. 21 pp. Presented before the Econometric Society, Dec. 28-30, 1960. A BOUNDEDNESS PROPERTY OF THE CLOSED P-2384 Winter, S., Jr. LINEAR MODEL OF PRODUCTION July 28, 1961 A proof of the boundedness property of infinite feasible sequences in closed, convex linear technologies. Proves the proposition that the fact that unbalanced growth paths are feasible does not negate the special significance of the maximal rate of balanced growth. 9 pp. ECONOMIC RECOVERY FROM THE EFFECTS OF P-2416 Winter, S., Jr. THERMONUCLEAR WAR Aug. 22, 1961 An outline of the problem of economic recovery from the effects of thermonuclear war. Discusses the range of possibilities occurring in the war, its three phases of recovery, and the capacity output needed in various industries to meet austere consumption requirements. 31 pp. Illus. Published in Civil Defense--1961, Hearings before a Subcommittee of the Committee on Government Operations, House of Representatives, Eighty-seventh Congress, First Session, August 1-4, 7-9, 1961. Presented before the Military Operations Subcommittee, Washington, D.C., Aug. 7-9, 1961. Winter, S., Jr. POSTATTACK DAMAGE ASSESSMENT: A CONCEPTUAL RM-2844-PR with ANALYSIS Nov. 1961

For abstract, see same title under Massell.

#### Title & Abstract

## Publication No. and Date

### Wohlstetter, A.J. SYSTEMS ANALYSIS VERSUS SYSTEMS DESIGN

P-1530 Oct. 29, 1958

An examination of the design and formulation of an economic systems analysis of defense problems. Includes a discussion of systems analysis vs. models, an Air Force example, the objectives and constraints in the design of systems studies, the enemy's objections and agreements, the modest value of mutually unsatisfactory strategies, uncertainty and the design of systems studies, and systems design vs. systems analysis. 64 pp. Illus.

## Wohlstetter, A. J. THE DELICATE BALANCE OF TERROR

P-1472 Nov. 6, 1958

A criticism of the popular view that deterrence of central war is easy. The inadequacy as well as the necessity of deterrence, the problem of accidental outbreak of war, and an aspect of disarmament are discussed. 45 pp. Published in Foreign Affairs, January 1959.

#### Title & Abstract

Publication No. and Date

Wolf, C., Jr.

ECONOMIC DEVELOPMENT AND MUTUAL SECURITY: SOME PROBLEMS OF U.S. FOREIGN ASSISTANCE PROGRAMS IN SOUTHEAST ASIA

RM-1778 Aug. 14, 1956

Part I of an investigation concerned with U.S. foreign assistance programs in Southeast Asia. Examines an experimental model of the relationship between political vulnerability and economic aspirations, the level of living, and economic expectations. Applications of this model are shown. 77 pp. Tables.

Wolf, C., Jr.

SOVIET ECONOMIC AID IN SOUTHEAST ASIA: THREAT OR WINDFALL?

P-972 Dec. 6, 1956

A discourse on the new Soviet diplomacy in Asia, that of extending economic aid to countries who qualify as nonallied with the U.S. Examines Soviet aid in Southeast Asia as a threat to U.S. interests, whether or not offers of aid by the Bloc should be matched by U.S. counteroffers of more aid on more favorable terms, and the effect of Soviet aid to nonallied countries. 15 pp. Tables. Published in World Politics, Oct. 1957. Presented before a group at the Associated Colleges of Claremont, Claremont, Calif., March 15, 1957.

Wolf, C., Jr.

FACTOR PRODUCTIVITY AND ECONOMIC GROWTH

P-1136 Aug. 1, 1957

A discussion of the causes of rising factor productivity. Two alternative hypotheses are offered to account for increases in output due to technological change. 16 pp. Table. Published in the Proceedings of the Western Economic Association, 1957. Presented before that Association at the Univ. of Utah, Salt Lake City, Aug. 30, 1957.

Wolf, C., Jr.

ECONOMIC RESEARCH ON SOUTHEAST ASIA IN THE P-1340 UNITED STATES: STATUS AND NEEDS April 1

P-1340 April 16, 1958

Maintains that most economic research on Southeast Asia in the U.S. is and has been descriptive, and that the research ought to be more scientific, or rigorously theoretical, than it has generally been. 5 pp. Presented before the Association for Asian Studies at New York City, April 2, 1958. on the status and needs of Southeast Asian economic research.

#### Publication No. Author(s) Title & Abstract and Date Wolf, C., Jr. GAINS FROM TRADE, MATERIALS SUPPLIES, AND P-1583 ECONOMIC DEVELOPMENT Jan. 2, 1959 An assessment of the feasibility of the objectives of U.S. economic assistance to underdeveloped countries from the standpoint of their connection with economic development, defined in terms of secularly rising national income. 20 pp. Illus. Wolf, C., Jr. COMPETITION AND COMPLEMENTARITY BETWEEN P-1743 DEFENSE AND DEVELOPMENT: A PRELIMINARY May 11, 1959 APPROACH Attempts to determine if defense expenditures are competitive, complementary, or independent of economic growth. Examines indirect effects of defense expenditure and considers other research implications. 14 pp. Tables. Presented before the Econometric Society in Washington, D.C., Dec. 29, 1959. Summary published in Econometrica, July 1960. Wolf, C., Jr. FOREIGN AID: THEORY AND PRACTICE IN 1960 SOUTHERN ASIA Princeton University Press, Princeton, N.J. 442 pp. Tables. \$7.50. Discussion of U.S. economic and military aid programs. Consists of two parts: foreign aid from an empirical and historical standpoint (the "Practice"), and foreign aid from the standpoint of the analysis and theory of aid allocation (the "Theory"). Wolf, C., Jr. ECONOMIC AID RECONSIDERED P-2217 Feb. 14, 1961 Comments on Prof. Milton Friedman's article "Foreign Economic Aid: Means and Objectives" (Yale Review, Summer 1958). This paper dispels some of the general arguments against foreign economic aid which are advanced by

Friedman. Reasonable objectives of foreign economic aid are suggested as well as its distinct limitations as a means of accomplishing other objectives. 22 pp. Published in

Yale Review, Summer 1961.

#### Title & Abstract

Publication No. and Date

Wolf, C., Jr.

ON ASPECTS OF KOREA'S FIVE-YEAR DEVELOP-MENT PLAN P-2288 April 24, 1961

Written during the author's stay in Korea as economic adviser to the Ministry of Reconstruction, March 3 to April 3, 1961. Comments on particular economic aspects relevant to development planning in Korea. Deals with multi-sector versus key-sector growth and makes suggestions for revising the Economic Development Council's statement on "Methods and Principles." Discusses the author's reactions to the proposed reorganization of economic planning in Korea. 54 pp. Presented before the Ministry of Economic Development, Seoul, Korea, March 28, 1961.

Wolf, C., Jr.

SOME CONNECTIONS BETWEEN ECONOMIC AND MILITARY ASSISTANCE PROGRAMS IN UNDER-DEVELOPED COUNTRIES

P-2389 Aug. 1, 1961

Examines three connections between economic and military aid to illustrate the characteristics and problems which the two programs share. The first connection arises from U.S. objectives in undertaking aid programs. The second concerns the role of nonmilitary objectives and criteria in military aid decision making. The third deals with the problem of incentives for recruiting top-quality personnel. 12 pp. Presented before the Military Psychology Division of the American Psychological Assn. at New York, Sept. 5, 1961.

Wolf, C., Jr.

DEFENSE AND DEVELOPMENT IN LESS-DEVELOPED COUNTRIES

P-2291-1 Sept. 1961

Studies some of the economic and political side-effects of U.S. military assistance to the defense establishments of underdeveloped countries. The relevance of this research to the revolution in world politics is also discussed. 13 pp. Tables. Presented before the Conference on the Revolution of Our Time, Princeton, N. J., May 31-June 2, 1961. Published in The Revolution in World Politics, M. Kaplan (ed.), Wiley & Sons, New York, 1962.

Author(s)				
Wolf,	C., Jr.			

#### Title & Abstract

## Publication No. and Date

with B. F. Massell ECONOMIC DEVELOPMENT AND POSTWAR RECUPERA-TION: A COMPARISON OF INDUSTRIAL PRIORITIES For abstract, see same title under Massell.

RM-2952-PR (AD 270637) Jan. 1962 & P-2274-1 April 1962

Wolf, C., Jr.

#### ECONOMIC PLANNING IN KOREA

P-2655 Oct · 1962

Examines national economic planning in Korea from the first effort made in 1954 toward comprehensive planning to the present five-year plan completed in 1961. This plan concentrates on three leading sectors (electric power, agriculture, and "social overhead capital") and emphasizes industrialization with major reliance on private enterprise. 13 pp. Published in Asian Survey, Dec. 1962, and in Korean Affairs, July 1964.

#### Title & Abstract

Publication No. and Date

Yeh, K. C.

ELECTRIC POWER DEVELOPMENT IN MAINLAND CHINA: PREWAR AND POSTWAR

RM-1821 (AD 123534) Nov. 27, 1956

Outlines the major trends in the growth of the electric power industry in Mainland China and examines some of the problems in the course of its development. The period covered is 1932 to 1955, with emphasis given to the years 1932 to 1936 and 1949 to 1955. 125 pp. Illus.

Yeh, K. C.

COMMUNIST CHINA'S PETROLEUM SITUATION

RM-3160-PR (AD 276532) May 1962

Assembles the available data on Communist China's production, importation, and consumption of petroleum from 1949 to 1960, and assesses its future prospects for increasing domestic production and reducing dependence on the USSR. Concludes that the target for self-sufficiency in 1962 appears to be highly unrealistic and dependence on imports seems likely to continue for some time. 80 pp. Illus.

Youngs, J. W. T. with

K. J. Arrow

THE DETERMINATION OF MANY-COMMODITY PREFERENCE SCALES BY TWO-COMMODITY COMPARISONS For abstract, see same title under Arrow.

P-49

Aug. 3, 1948